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THROMBOSIS OF THE CORONARY ARTERIES

JAMES B. HERRICK, M.D.

CHICAGO

In a paper[1] on certain clinical features of sudden obstruction of the coronary arteries, read six years ago before the Association of American Physicians, I called attention to the fact that while such obstruction as by a thrombus was very often suddenly fatal, it was not necessarily so; for the coronary arteries were not in the strictest sense terminal arteries; there were often anastomoses capable of reestablishing circulation in the infarcted area to such an extent as to enable the heart to functionate for a time at least. This had been shown by anatomic study of the coronaries, by necropsy observations by the pathologists, by experimental ligation of these vessels, and by clinical experience controlled by postmortem examinations.

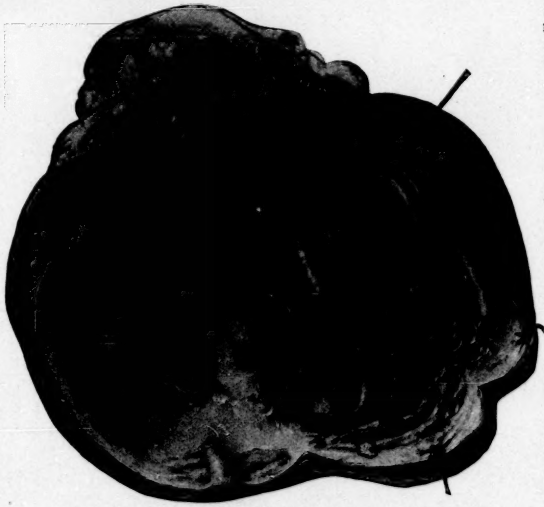

Fig. 1 (Case 3).—Changes on the endocardial surface of left ventricle.

A tentative grouping of the cases of coronary thrombosis based on clinical symptoms was made:

1. Cases of instantaneous death, a group graphically described by Krehl, in which there is no death struggle, the heart beat and breathing stopping at once.

2. Cases of death within a few minutes or a few hours after the obstruction. These are the cases that are found dead or clearly in the death agony by the physician who is hastily summoned.

3. Cases of severity in which, however, death is delayed for several hours, days or months, or recovery occurs.

4. A group that may be assumed to exist embracing cases with mild symptoms, for example, a slight precordial pain ordinarily not recognized, due to obstruction in the smallest branches of the arteries.

It was Group 3 whose clinical phenomena were discussed, as illustrative of which a few cases were briefly cited, including one with necropsy findings.

These cases of coronary thrombosis are, as it seems to me, of commoner occurrence than is generally supposed, and that is the justification for repeating some of what was contained in the former paper and for adding reports of other cases and for touching on some recent experimental work that has a direct bearing on this subject.

CLINICAL SYMPTOMS

Most of the patients are middle-aged or elderly men. The heart and blood vessels in many show the evidence of arterial and cardiac sclerosis; the blood pressure may be high. In others no sign of such change is to be made out. In fact, in two of my three cases with necropsy, the only significant vascular sclerosis was in the coronary arteries, the hearts were of normal size, and there had been no hypertension during life. In one there was slight involvement of the beginning of the aorta. Previous attacks of angina pectoris may have been experienced. If this has been the case, the patient will describe the attack due to the coronary thrombosis as of unusual severity. Often there is no assignable cause for the attack such as is commonly noted in the typical paroxysmal angina—walking, a heavy meal, undue excitement, etc.—though in some cases these exciting factors seem to provoke the attack or, at least, greatly to aggravate it when it has started. The painful seizure is usually more enduring than in ordinary angina, the spell lasting many minutes or several hours, or a status anginosus developing. The location of the pain, as in the classical angina, is com-

1. Herrick, J. B.: Clinical Features of Sudden Obstruction of the Coronary Arteries, J. A. M. A. **59**: 2015 (Dec. 7) 1912.

monly substernal, with frequent radiation to the arms and neck. But in many of the thrombotic cases the pain is beneath the lower sternum or even in the upper epigastric region; and there may be no radiation to the arm or neck. This epigastric reference of the pain, with the nausea and vomiting that freqeuntly occur, often suggests to patient and physiciar some abdominal accident, such as acute pancreatitis perforation of the gallbladder, or a gastric or duodenal ulcer. And these suspicions are strengthened by the fact that there are so frequently signs of shock and collapse—ashy hue of the face, clammy skin, and small, rapid, feeb'e pulse.

The heart is commonly rapid, even to 140 or more, though slow heart action has been recorded. There may be irregularities, such as extrasystoles or partial block. The pulse usually lacks in strength and may be almost imperceptible, though in some cases the strength is wonderfully well preserved. Blood pressure is lowered, and tends to grow lower in the unfavorable cases. The heart tone may be startlingly faint, both because of the weakness of the heart's musculature and because of an acute emphysema that may develop and mask the heart sounds. Over the infarcted area a pericardial friction is sometimes heard. The heart may reveal evidence of dilatation by its increased area of dulness and its mitral systolic murmur due to relative insufficiency of the valve. Râles in the bronchi, with other evidence of pulmonary edema, may be present. Passive congestion of the kidney may show in a trace of albumin in the urine. In some cases, cardiac edema of marked degree appears, the albumin being large in amount, the legs badly swollen, and free fluid being present in the abdominal cavity. The mind is commonly quite clear. I have been surprised at the preservation of bodily strength that is often manifested. Patients occasionally walk about within a few hours after such a seizure, and within a few days may be outdoors trying to attend to business.

These symptoms will often enable one to make a reasonably certain diagnosis of acute obstruction of the coronary artery. As in so many other conditions, the first essential is to think of this condition as a possibility and to rid the mind of the notion that such a diagnosis is possible only at necropsy.

Fig. 2 (Case 3).—Site of thrombi and fairly normal external appearance of heart.

In the following three cases the diagnosis was confirmed by necropsy. In the first instance, the first I had ever recognized clinically, the diagnosis was decidedly tentative nad hesitating. In the other two, as well as in several in which no necropsy has been permitted or in which the patients are still living, diagnosis has seemed definite, as clear, for instance, as in most cases of obstruction of a cerebral vessel. I give very brief abstracts: Case 1 is reported more in detail in the article of six years ago.

REPORT OF CASES

CASE 1.—A man, aged 55, was seized with severe pain low in the chest and epigastrium. He vomited. The physician, believing, as did the patient, that the attack was of gastric origin, washed out the stomach; but relief came only with morphin. The man lived fifty-two hours. He was conscious to the last. His pulse from the first was rapid and very weak, the heart tones nearly inaudible. An acute emphysema with many moist râles developed. No abdominal or other than cardiac cause could be made out as an explanation of the condition. The temperature never was above 99.2 F. The left ramus descendens was found plugged by a thrombus at a narrow spot where there was a small pathologic mural roughening and thickening.

CASE 2.—A man, aged 62, while walking on the board walk at Atlantic City, was seized with a terribly severe pain in the lower precordia. He was helped to the hotel, but refused to call a physician while in Atlantic City or for the next two days while in New York, for, as he said, he knew from the severity of the initial pain, the great weakness and difficult breathing, that he would be ordered to a hospital, and he wished to get to his home in Chicago for his illness and, as he feared, his death. He lived over two weeks from the onset of the attack. His heart when he reached Chicago was dilated, weak and somewhat rapid. His blood pressure became progressively lower. There were dyspnea, cyanosis and marked edema of the legs and albuminuria. Death was as in ordinary cardiac failure. Necropsy revealed recent plugging by a thrombus of the descending branch of the left coronary, with softening of the heart muscle at the left apex and the lower interventricular septum.

In this, as in the other case cited, the aorta was free from evidence of sclerotic change. No other vascular lesions were found than the isolated patches of sclerosis in the coronary. It happened also that in each case the patient had only a short time before been carefully examined by competent physicians and had

been pronounced in good health as to heart, blood pressure, urine, etc.

CASE 3.—A physician, aged 42, who had never suffered from angina pectoris, had no acute or chronic infection so far as he knew, and who regarded himself as free from cardiovascular and renal disease, was seized, while in this seemingly good health, with a sudden, excruciating pain in the lower sternal region, which pain radiated to the arms and to the epigastrium. He was profoundly shocked, very weak and nauseated, the skin cold and clammy, the pulse rapid and thready. His colleagues who saw him thought he would die in a very short time. Morphin was necessary to control the pain. After a time he rallied, and in ten days was able to be about and even tried to do some professional work. But in a few days his weakness, precordial distress on exertion, dyspnea and irregular, rapid and small pulse caused him to give up. He rested, again improved, and came to Chicago. He was seen by my assistants, J. R. Greer and F. M. Smith, who ventured a diagnosis of coronary obstruction, a diagnosis that I felt was correct when I saw him a few days later. Electrocardiograms taken on these two occasions gave support to these opinions, a point to which reference will be made later. Rest and small doses of digitalis were ordered, and improvement followed. The summer vacation was spent on an island, where there was considerable violation of the injunction as to quiet and digitalis, the patient not only eating very heartily, but not infrequently going on strenuous walks, fishing and hunting trips, even though precordial pain, occasional attacks of dyspnea, and cardiac irregularity gave warning that the heart was far from normal. From an unduly severe strain of this sort he suffered for several days with dyspnea and arrhythmia; he contracted an infectious bronchitis and hastened to Chicago, where, in a deplorable condition, he went under my care in the Presbyterian Hospital, Sept. 26, 1917. The dyspnea and cyanosis were marked; he was sleepless and had Cheyne-Stokes breathing; the temperature rose to 102. The blood pressure was not high, the heart was slightly enlarged to the left, and there was a faint systolic murmur at the apex. After four days he developed signs of pneumonia; the respiration rose to 32 and the temperature to 105; there were bloody and rusty sputum, marked albuminuria and leukocytosis; he became delirious, and just as a distinct drop in temperature and a clearing of the mind made one wonder if recovery after all might be a possibility, he died suddenly. Necropsy disclosed pneumonia of the lower lobe of the right lung and several infarcts in other portions of the same lung.

Fig. 3 (Case 3).—Electrocardiogram taken May 3, 1917, forty-one days after the coronary obstructive symptoms. Digitalis not used at this time.

The heart was large—the left ventricle at the apex, the lower interventricular septum and the papillary muscles, especially the anterior one, thinned, scarred and cutting like gristle. The descending branch of the left coronary and the large descending branch of the left circumflex were completely obliterated by old thrombi. The only sclerotic changes in the arteries were a few small patches in the aorta close to the openings of the coronary arteries, and similar patches in the coronaries themselves. It may be added that no history or stigmata of syphilis were noted during life, and that the Wassermann test on the blood had been negative.

According to the necropsy record made by Dr. Thacher of the Presbyterian Hospital, Oct. 8, 1917, the heart weighed 415 gm. The enlargement involved both sides of the heart. The external surface was fairly normal in appearance with the exception of a pale, depressed area 4 cm. in diameter midway between the base and apex of the left ventricle and a smaller similar area on the lateral surface close to the apex. The wall of the left ventricle near the apex and the interventricular septum were thin and of gristly consistency, cutting with marked resistance. The endocardium of the left ventricle had a pale, mottled appearance especially marked over the lower three quarters of the septum and the papillary muscles. The papillary muscles were smooth, contracted and firm, these changes being particularly marked in the anterior muscle. The greater extent of the fibrous changes in the endocardial and subendocardial tissues as compared with those on the external surface of the heart was striking. The left coronary artery contained an organized thrombus in the ramus descendens anterior 3 cm. from its origin. Also the first descending branch of the circumflex was occluded 1.5 cm. from its origin. The coronary arteries showed sclerotic plaques scattered throughout most of their course, these spots varying in size from 0.5 to 2 mm. in diameter. The aortic leaflets were thickened. There were a few sclerotic areas in the supra-sigmoid area of the aorta.

EXPERIMENTAL WORK

I wish to call attention briefly to certain experimental work that has a direct bearing on the question of obstruction of the coronary arteries. At my suggestion, Dr. Fred M. Smith[2] in the Presbyterian Hospital and Rush Medical College studied experimentally the coronary arteries in dogs.

Method.—He took an electrocardiogram of each dog when under ether. Then the desired branch of the coronary artery was ligated. Following the operation electrocardiograms were taken at intervals varying from a few minutes to many days or weeks. On all dogs that died or that were killed a postmortem was made, and the gross and microscopic structure of the myocardial lesion was studied. Electrocardiograms were compared to see if there was uniformity in the tracings made after ligation of the same arteries and with the same lesions. Lastly, in human beings with

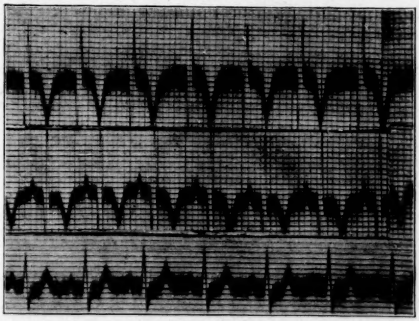

Fig. 4 (dog).—Electrocardiogram taken two days after ligation of anterior and posterior descending branches of the left circumflex artery.

2. Smith, F. M.: The Ligation of Coronary Arteries with Electrocardiographic Study, Arch. Int. Med. **22**: 8 (June) 1918.

symptoms suggestive of coronary thrombosis, the electrocardiograms were compared with those in dogs.

Results.—The results may be thus summarized:

1. Dogs may live days or months or may recover after ligation of branches of the coronary arteries, even branches of considerable size. This is contrary to the findings of Cohnheim, but is in accord with those of Porter, Miller and others.

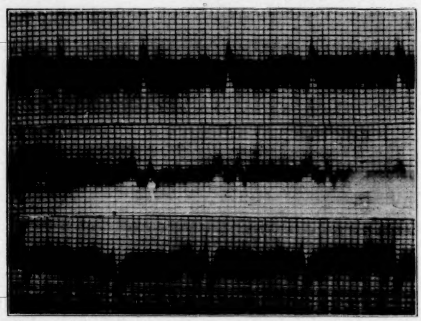

Fig. 5 (Case 3).—Electrocardiogram taken Sept. 27, 1917, 178 days after coronary thrombosis.

2. After the ligation of special branches, the lesions produced in the muscle are fairly constant. These lesions are most marked in the endocardial and subendocardial tissues, that is, in the conducting region. These findings may be compared with those of Oppenheimer and Rothschild.

3. Following the ligation, numerous irregularities, such as extrasystoles, tachycardia, auricular fibrillation, auricular flutter and ventricular fibrillation, may result. Thus far it has been impossible to predict the type of irregularity that will follow a ligation.

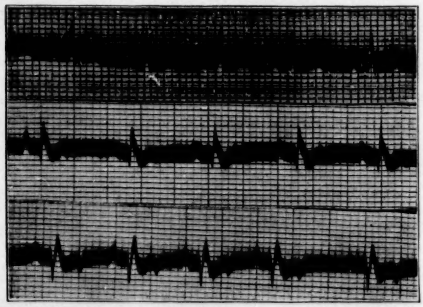

Fig. 6 (dog).—Electrocardiogram taken thirty-four days after the ligation of the ramus circumflexus sinister. Compare this low voltage tracing with Figure 5.

4. There seems to be a fairly constant variation in the electrocardiogram following the ligation of a particular branch of the coronary.

5. There is some hope that the work may assist in interpreting abnormal human electrocardiograms. The thought has been that if it can be proved that with a certain artery obstructed there is a definite lesion in the heart muscle or in the conducting system, and if with that lesion there is a definite electrocardiogram, may we not, when we encounter that abnormal electrocardiogram in the human being, particularly if he has had symptoms suggestive of coronary thrombosis, be able to state with a reasonable degree of certainty that the patient has had obstruction in a particular portion of the coronary system? May it perhaps be possible to localize a lesion in the coronary system with an accuracy comparable to that with which we locate obstructive lesions in the cerebral arteries?

NEED OF CONFIRMATION

This work needs confirmation as to the regularity of the results obtained and especially as to the interpretations and conclusions. Confirmation from necropsies is particularly desired. Patients with this condition do not present themselves very often. A large proportion with coronary obstruction die a sudden death, or are too ill to come to the office or to a hospital where they can have electrocardiographic tracings taken. And yet we have been able to take several suggestive tracings in patients in whom we believed these coronary thromboses to have occurred, and in one of the cases, Case 3, in which the patient lived five months after obstruction, the abnormal electrocardiograms gave helpful confirmatory evidence. Necropsy revealed the lesions anticipated.

TUBERCULOSIS ASSOCIATED WITH MALIGNANT NEOPLASIA

REPORT OF TWENTY CASES *

A. C. BRODERS, M.D.
ROCHESTER, MINN.

To Rokitansky[1] has been given the credit for teaching that tuberculosis and cancer are incompatible diseases; but since McCaskey,[2] in 1902, made the statement that he was strongly inclined to doubt that Rokitansky had ever held to this extreme view, it may be well to quote direct from Rokitansky's article on cyst formation:

> Cyst formation, as a new growth, is rarely found concurrent with tubercle, either in the same organ or in the same organism generally.

With regard to tuberculosis and cancer, he said:

> A similar antagonism, as shown from still more numerous observations, prevails between tubercle and carcinoma. Whenever their general correlation is susceptible of proof, cancer has seemed to succeed to tuberculosis, tubercle rarely to become developed after the extinction of cancer and its crasis.

Also:

> A corresponding result of much interest is afforded by a comparison of the scale of frequency of cancer and tubercle, as well as of several special local relations of both. They are diametrically opposed to one another, as thus:

FREQUENT	RARE
Lung tubercle	Lung cancer
Ovarium cancer	Ovarium tubercle
Salivary gland cancer	Salivary gland tubercle
Stomach cancer	Stomach tubercle
Esophagus cancer	Esophagus tubercle
Rectum cancer	Rectum tubercle
Ileum tubercle, etc.	Ileum cancer, etc.

* From the Department of Surgical Pathology, Mayo Clinic.

1. Rokitansky, C.: A Manual of Pathological Anatomy, London, Sydenham **1**: 313-314, 1855.

2. McCaskey, G. W.: The Clinical Association of Cancer and Tuberculosis, with Report of a Case, Am. J. M. Sc. **124**: 97-105, 1902.

From the foregoing, it is obvious that Rokitansky did not teach that the two diseases are incompatible but that an antagonism prevails. While a few writers have held to the view that an antagonism exists between active tuberculosis and cancer, by far the greater number are of the opinion that no antagonism exists. McCaskey is apparently inclined to the former view, and he has suggested the systematic local injection of tuberculin in the cancerous tissue in properly selected inoperable cases of cancer. Dabney,[3] writing in 1916, fourteen years later, practically agrees with McCaskey. He has injected the tuberculin in seven cases of cancer, and in one, improvement of the patient's general condition immediately became very marked, and this improvement continued after three months or more of tuberculin therapy. Dabney used, as a basis for his argument in favor of the injection of tuberculin in cancer cases, that it would bring about a lymphocytosis in practically all cases; and as Murphy

Fig. 1 (A 59139).—Tuberculosis and epithelioma in lymph gland of neck (low power): *A*, tuberculosis showing giant cells; *B*, epithelioma. The patient died.

and Morton, and others have shown that lymphoid activity is an essential factor in the immunity process of artificially engrafted cancer, it would seem that the tuberculosis that brought about a condition of lymphoid activity would exert an inhibitory influence in cancer.

From time to time the negative side of this question has been most ably defended, not only by observations made at necropsy but also from a surgical pathologic standpoint. The first and one of the most noted defenders of the theory was Lebert.[4] Williams[5] found a history of phthisis in 151 (47.7 per cent.) of 316 cancerous families. Lubarsch,[6] in 1888, found carcinoma in 2,668 tuberculous cadavers in 117 (4.4 per cent.) instances, and in 3,868 nontuberculous cadavers he found the condition in 452 (11.7 per cent.)

Fig. 2 (A 59139).—Same as Figure 1 (high power): *A*, giant cell of tuberculosis surrounded by epithelioid cells; *B*, epithelioma showing numerous mitotic figures.

instances. In 569 carcinomatous cadavers he found tuberculosis in 117 (20.6 per cent.) instances, and in 5,967 noncarcinomatous cadavers he found it in 2,551

Fig. 3 (A 192320).—Tuberculosis and epithelioma in lymph gland of neck (low power): *A*, tubercle with giant cell; *B*, epithelioma. The patient's condition is unknown.

(42.7 per cent.). His statistics indicate that carcinoma is found more often in nontuberculous than in tuberculous persons, the proportion being about 3:1 in favor

3. Dabney, W. M.: Tuberculosis and Cancer: A Possible Explanation of the Long-Discussed Question of Their Mutual Antagonism with the Suggestion of the Use of Tuberculin for the Prevention of Recurrence of Cancer, M. Rec. **90**: 804-805, 1916.
4. Lebert, H.: Beiträge zur Kenntniss des Gallertkrebses, Virchows Arch. f. path. Anat. **4**: 214-215, 1852.
5. Williams, W. R.: Cancer and Phthisis as Correlated Diseases, Lancet **1**: 977, 1887.
6. Lubarsch, O.: Ueber den primären Krebs des Ileum nebst Bemerkungen über das gleichzeitige Vorkommen von Krebs und Tuberculose, Virchows Arch. f. path. Anat. **111**: 280-317, 1888.

of the former. He has also shown that tuberculosis is found twice as often in noncarcinomatous as in carcinomatous persons. Moak,[7] quoting Lubarsch, mentions five possible combinations of cancer and tuberculosis:

1. Simple coincidence, the diseases having no apparent action the one on the other.

Fig. 4 (A 51290).—Tuberculosis and epithelioma in lymph gland of neck (low power): *A*, tuberculosis, showing necrotic area and giant cells; *B*, epithelioma. The patient is living and well, ninety-one months after operation.

2. Metastatic carcinoma developing secondarily on a recent or old tuberculous focus.

3. A tuberculous infection becoming engrafted on a cancer in full evolution.

4. Chronic progressive tuberculosis on which develops a cancer.

5. The simultaneous development of both cancer and tuberculosis.

Naegeli,[8] in 420 necropsies on adults aged more than 18 years, showed that 93 per cent. had either active, latent or healed tuberculosis.

Hoffman's[9] statistics show that in the United States registration area for the year 1913, out of 93,293 deaths from tuberculosis, 73.39 per cent. occurred at ages under 45, and 26.61 per cent. at ages over 45, and that of 49,887 deaths from cancer at all ages, 15.46 per cent. occurred at ages under 45, and 84.54 per cent. at ages over 45.

ANATOMIC LOCATION OF TUBERCULOSIS AND CANCER

Rokitansky and others have pointed out that these conditions are rarely found combined in certain organs, such as the esophagus, stomach, ileum, rectum, salivary glands, lungs, ovary, thyroid and pancreas. I was able to find but five positive and probable cases in which tuberculosis and cancer of the stomach were combined. The two diseases, in most instances, seem to select different anatomic points of origin, and by a metastatic process through the lymph or blood stream they meet at the starting point of one or the other, or at some point remote from their field of origin, such as the lymphatic glands.

Why one tissue or organ should be susceptible to malignant neoplasia or tuberculosis, and another should be, to a great extent, immune, is difficult to explain; nevertheless, such seems to be an established fact.

TABLE 1.—CASES FROM THE LITERATURE OF THE RELATIONSHIP OF TUBERCULOSIS AND CARCINOMA AT NECROPSY

Author	Carcinoma	Associated Tuberculosis	Per Cent.
Cahen*	257	13	5.0
LeGoupils†	632	53	8.4
Loeb‡	111	31	27.9
Lubarsch*	569	117	20.6
Rapok§	399	39	9.8
Sandu-Miclescos§	150	14	9.3
Schraders§	50	8	16.0
Williams§	166	27	16.2
	1,445	236	Average 16.3

* Cahen, cited by Lubarsch: Virchows Arch. f. path. Anat. 111:305-306, 1888.

† LeGoupils: Coincidence et rapports de la tubereulose et du cancer, Thèse de Paris, 1882, p. 38, cited by Lubarsch: Virchows Arch. f. path. Anat. 111:303, 1888.

‡ Loeb: Combination von Krebs und Tuberculose, Inaug.-Diss. München., 1889, cited by Naegeli: Virchows Arch. f. path. Anat. 148:437, 1897.

§ Cited by Naegeli: Virchows Arch. f. path. Anat. 148:436, 1897.

Tuberculosis associated with sarcoma has been reported by Ricker,[10] Trendweiler[10] and Iscovesco[10] (Moak). Tuberculosis associated with connective tissue malignant neoplasia is rare; the records of the Mayo Clinic show that epithelial tissue malignant neoplasia is about nine times as frequent as connective tissue malignant neoplasia. As an indication of the frequency of the association of tuberculosis with malignant neoplasia, statistics are cited both from necropsy and surgical pathologic standpoints as in Table 1.

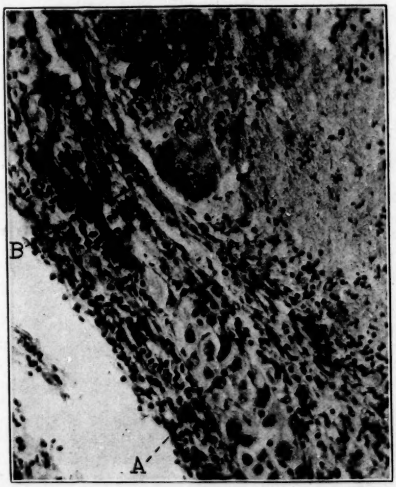

Fig. 5 (A 51290).—Same as Figure 4 (high power): *A*, epithelioma cells; *B*, giant cell of tuberculosis.

7. Moak, H.: On the Occurrence of Carcinoma and Tuberculosis in the Same Organ or Tissue, J. M. Res. 8: 128-147, 1902.

8. Naegeli, O.: Ueber Häufigkeit, Localisation und Ausheilung der Tuberkulose, Voirchows Arch. f. path. Anat. 160: 426-472, 1900.

9. Hoffman, F. L.: The Mortality from Cancer Throughout the World, Newark, Prudential, pp. 187-188, 1915.

10. Cited by Moak: J. M. Res. 8: 143, 1902.

CASES FROM THE LITERATURE FOUND BY THE SURGICAL PATHOLOGIST OR AT NECROPSY

Naegeli[11] reported three cases in which tuberculosis and carcinoma were associated. The first patient had carcinoma and tuberculosis of the rectum, the second carcinoma and tuberculosis of the ileum, and the third colloid carcinoma and tuberculosis of the cecum.

Fig. 6 (A 72500).—Tuberculosis and lymphosarcoma in lymph gland of neck (low power): *A*, tubercle with giant cell; *B*, lymphosarcoma cells. The condition of the patient is unknown.

TABLE 2.—CASES STUDIED IN THE SURGICAL PATHOLOGIC LABORATORY OF THE MAYO CLINIC

Cases	20
Males	14 (70%)
Females	6 (30%)
Average age	49 years
Oldest	77 years
Youngest	20 years
Family history of malignancy	2 (10%)
Family history of tuberculosis	3 (15%)
Personal history of tuberculosis	3 (15%)
Epithelioma of the lip	7
History of smoking	2 (28.5%)
TYPES OF MALIGNANT NEOPLASMS	
Squamous cell epithelioma	13 (65%)
Melano-epithelioma	1 (5%)
Adenocarcinoma	5 (25%)
Lmyphosarcoma	1 (5%)
Average duration	21.5 months
Average greatest diameter	4.2 cm.
Greatest diameter	15 cm.
Smallest diameter	1 cm.
PRIMARY LOCATIONS OF MALIGNANT NEOPLASMS	
Lip	7 (35%)
Cheek	3 (15%)
Breast	2 (10%)
Near angle of jaw	2 (10%)
Ear	1 (5%)
Nose	1 (5%)
Neck (lymph glands)	1 (5%)
Parotid gland	1 (5%)
Transverse colon	1 (5%)
Rectum	1 (5%)
Total with metastasis	11 (55%)
Total without metastasis	9 (45%)
LOCATIONS OF METASTATIC NEOPLASMS	
Lymph glands of neck	9 (81.8%)
Lymph glands of axilla	2 (18.2%)
METASTASES TO NECK: PRIMARY LOCATIONS	
Lip	4 (44.4%)
Cheek	2 (22.2%)
Ear	1 (11.1%)
Nose	1 (11.1%)
Neck	1 (11.1%)
METASTASES TO AXILLA: PRIMARY LOCATION	
Breast	2 (100%)
LOCATIONS OF TUBERCULOUS PROCESSES	
Lymph glands of neck	15 (75%)
Lymph glands of axilla	2 (10%)
Lymph glands of mesentery	1 (5%)
Omentum and peritoneum	1 (5%)
Lip	1 (5%)
THE RELATION OF THE ASSOCIATION OF TUBERCULOSIS AND MALIGNANT NEOPLASIA	
In the same organ or tissue	8 (40%)
Lymph glands of neck (lymphosarcoma, primary 1)	7 (87.5%)
Lymph glands of axilla	1 (12.5%)
In the same microscopic field (low power) lymph glands of neck	7 (87.5%)
In the adjacent organs or tissues	5 (25%)
Lymph glands of the neck	3 (60%)
Lymph glands of the neck and the parotid gland	1 (20%)
Lymph glands of the axilla	1 (20%)
Not intimately associated	7 (35%)
Malignant neoplasm—Tuberculosis:	
Lip—lymph glands of neck	3 (42.9%)
Cheek—lymph glands of neck	1 (14.3%)
Near angle of jaw—lymph glands of neck	1 (14.3%)
Transverse colon—lymph glands of mesentery	1 (14.3%)
Rectum—omentum and peritoneum	1 (14.3%)
PRESENT CONDITION	
Dead	4 (20%)
Living	10 (50%)
Condition unknown	6 (30%)

Three of the four patients who died had malignant metastases in the glands of the neck.

Two of the ten living patients have a recurrence of malignancy, three are in good health, and five have been operated on too recently to be considered. Of the three known to be in good health, 160 months, ninety-one months, and thirty-nine months, respectively, after their last operations, the latter two had epithelioma and tuberculosis in the glands of the neck.

Warthin[12] reported two cases of carcinoma and primary tuberculosis associated in the mammary gland; in the second case both diseases were in the axillary glands also.

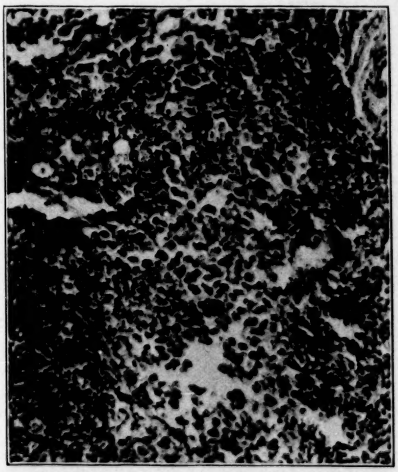

Fig. 7 (A 72500).—Same as Figure 6 (high power): lymphosarcoma cells.

Crowder[13] reported a case of tuberculosis and carcinoma of the cecum with tuberculosis of the lungs, peribronchial and retrocecal lymph glands.

11. Naegeli, O.: Die Combination von Tuberculose und Carcinom, Virchows Arch. f. path. Anat. **148:** 435-448, 1897.

12. Warthin, A. S.: The Coexistence of Carcinoma and Tuberculosis of the Mammary Gland, Am. J. M. Sc. **118:** 25-35, 1899.

13. Crowder, T. R.: A Contribution to the Pathology of Chronic Hyperplastic Tuberculosis of the Caecum, Based on the Study of Two Cases, in One of Which Carcinoma of the Caecum Coexisted, Am. J. M. Sc. **111:** 668-693, 1900.

Moak reported five cases of associated tuberculosis and carcinoma. The first case is practically the same as Warthin's second case; the primary tuberculosis and carcinoma in the mammary gland were associated with both diseases in the axillary glands. In the second case, metastatic carcinoma was associated with tuberculosis in an axillary lymph gland. In the third, carcinoma of the mammary gland was associated with carcinoma and tuberculosis in a lymph gland, probably from the axilla. In the fourth, adenocarcinoma was associated with tuberculosis in the sigmoid flexure, and the same combination was in the liver and the left kidney. The fifth case showed an adenocarcinoma and tuberculosis of the lungs, bronchial glands, retroperitoneal hemolymph glands, suprarenal, liver and spleen, secondary to primary carcinoma of the prostate and primary tuberculosis of the lungs. Moak quotes Steinhauser[14] as having collected from the literature eighty-three instances of lupus and carcinoma of the skin, and reported five new cases. Prior to the publication of the articles of Naegeli, Warthin, Crowder and Moak, in 1897, 1899, 1900 and 1902, respectively, a fairly large number of cases showing the association of the two conditions were reported, particularly in Europe, and since that time a fairly small number have appeared both here and abroad.[15]

CONCLUSIONS

1. The theory prevailing among the majority of physicians for a number of years and still prevailing among a few, that tuberculosis and malignant neoplasia are antagonistic, has not been borne out by the facts.

Fig. 8 (A 205751).—Melano-epithelioma of lymph gland of neck (high power).

2. The fact that some tissues or organs are, to a certain degree, immune from one or the other or both of these diseases does not prove that the two diseases are antagonistic.

3. If the observations of Naegeli are correct, in which he showed that in 93 per cent. of 420 necropsies on adults more than 18 years of age, either active, latent or healed tuberculosis had been present, then it

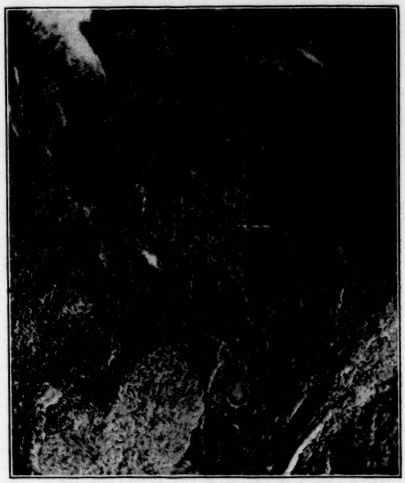

Fig. 9 (A 205751).—Tuberculosis in lymph gland, same as Figure 8, different field (low power). The condition of the patient is unknown.

is reasonable to believe that similar findings should prevail in an equal number of persons who have died with malignant neoplasia.

4. It would seem that the reason pathologists are not finding tuberculosis more frequently at necropsy in persons who have died with malignant neoplasia is that the pathologists are satisfied to find the malignant neoplastic condition, and therefore fail to make a thorough search for tuberculosis.

5. Since the surgical pathologist's examination is limited to the tissue removed by the surgeon, he is greatly handicapped in the search for the two conditions associated, while the pathologist doing a necropsy has access to a large part or the whole of the body.

6. The fact that active tuberculosis occurs most frequently in persons under 45, and malignant neoplasia, especially epithelial tissue malignant neoplasia, most frequently in persons over 45, does not prohibit the association of latent and healed tuberculosis with malignant neoplasia.

7. In our series of twenty cases the two conditions were associated in the same microscopic field seven times (35 per cent.).

14. Steinhauser, cited by Moak: J. M. Res. **8**: 142, 1902.

15. In addition to the references already given, the following will be found of interest:
Broders, A. C.: Tuberculosis of the Stomach, with Report of a Case of Multiple Tuberculous Ulcers, Surg., Gynec. & Obst. **25**: 490-504, 1917.

Industries Women May Engage In.—Women are capable of doing any and all kinds of work. It is not a question of women and industries, but of the individual woman and the individual job. If the woman is properly selected through physical examination, and is allowed to work under medical supervision, and the occupation is conducted subject to the standards set for hygiene, sanitation and accident prevention, women can do any sort of work which men can do.—*American Journal of Public Health.*

METHEMOGLOBINEMIA DUE TO POISONING BY SHOE DYE

REPORT OF A SERIES OF CASES AT AN ARMY CAMP

RICHARD E. STIFEL, M.D. (CLEVELAND)
Captain, M. C., U. S. Army; Chief of Laboratory, Base Hospital
CAMP JOSEPH E. JOHNSTON, JACKSONVILLE, FLA.

July 18, 1918, a patient was admitted to the base hospital of Camp Johnston in an alarming state of cyanosis. His finger-nails and lips were a deep blue, almost black, yet he complained of no special discomfort. The condition was first noted by friends of the patient, who himself would not have known that he was ill. Examination of the patient was essentially negative, except in the marked cyanosis. The temperature and pulse were normal. Blood taken by puncture of the finger appeared dark. The red and white counts were about normal, but the hemoglobin could not be read on the Tallqvist scale, since it was much above 100. With rest in bed and catharsis, the patient quickly regained his normal color, so that he was well in twenty-four hours.

Following this initial case in July, other cases occurred in August, September and October. By the end of October there had been sixteen cases, in all of which the patients recovered promptly, usually in twelve hours, by rest in bed and catharsis. Many, however, complained of headache, nausea, dizziness and general malaise.

The condition was assumed to be a sulphemoglobinemia, and was so unusual that a special board was appointed by the camp surgeon's office to collect data and investigate these cases. A captain in the Medical Corps was sent from Washington to study the cases, the etiology of which remained in doubt. The general belief was that the condition was due to poisoning or intoxication, or infection by food or water. The possibility of infection by Gaertner's bacillus was kept in mind. The investigator from Washington gathered data, which, though negative, was of value. He found that the cases, while coming mostly from Block A, were not related to any mess, any menu or any particular article of food. Cases occurred on various days of the week. The water supply was ruled out. All the water in this section of Florida was known to contain traces of hydrogen sulphid. While the base hospital laboratory examination of scrapings from one of the tanks during the summer had shown sulphur granules and thiobacteria, the water supply was known to be excellent. Moreover, no cases of cyanosis had occurred in the civil population of Jacksonville, which was furnished water not unlike that of the camp Thus the matter stood, Nov. 1, 1918, when the seventeenth and last case of cyanosis occurred At noon, November 1, a report came to the base hospital laboratory that there was a case of cyanosis in Jacksonville. I accordingly went to the city with the necessary equipment for making a spectroscopic examination and percentage determination of the hemoglobin, a blood count, blood culture and stool culture. I had seen none of the preceding cases. At 2 o'clock, when the patient was examined, he had entirely recovered from the cyanosis

REPORT OF CASE

The patient, Second Lieut. J. M. M., Q. M. C., aged 23, became "blue" at about 6 p. m. the preceding day, and complained of dizziness, headache, and of feeling cold. He went to the home of a friend in Jacksonville, where he was immediately put to bed, because "he looked like the dead body of a drowned man." At 8 p. m., a captain in the Medical Corps was called to see him. Castor oil was prescribed. After thorough catharsis during the night, the patient felt better and his normal color returned. The patient dated his illness to three days before he became blue, at which time he began having slight diarrhea which he thought terminated in the cyanosis. He was the first to notice that he was blue, but it did not alarm him when he saw himself in the mirror, since some of his friends had had the same trouble and had recovered from it promptly. The patient had been eating in Block H, while most cases came from Block A. He had eaten two meals in Jacksonville on the day he became ill and one a week before he took sick. All other meals were taken at his regular mess. He never ate cheese or fish. He did not remember of eating heartily of any dish, except fresh, raw apples, or of partaking of any unusual food or drink, previous to his illness. He believed that the lemonade at his mess might be the cause of the trouble, suspecting that the lemon extract might contain wood alcohol. He stated with certainty that he had eaten no meat for two and one-half weeks before he became sick. Four days before he became blue, and one day before he began to have diarrhea, he began eating meat.

The history thus far suggested the possibility of meat being the etiologic factor. It was only on November 7, when the patient was quite well, that the fact was elicited that he had had his shoes darkened on the day he became ill. He stated that the odor of the dye had seemed pleasant when it was applied, but after the "blue spell" the odor, which adhered to the shoes, was offensive. This was the clue that led to the shoe dye.

THE SHOE DYE

I then interviewed three other men who had been blue, and all of them were positive they had had their shoes dyed the day they became ill, or had worn newly dyed shoes on that day. One man stated voluntarily that his shoes were distasteful to him after he had left the hospital. They all had the work done at "Toney's" boot black stand in Jacksonville. They were all newly commissioned. This fact strengthened the case against the dye, for the necessity of darkened shoes, that is, shoes to match puttees, was felt most by the newly commissioned officers in Block A, who were getting their equipment. The enlisted men in the blocks could ill afford to pay a dollar, which was Toney's price for the dyeing of a pair of shoes. The fifth man interviewed, who had been blue, had also had his shoes dyed at Toney's but he was sure that they had been dyed a week after he was in the hospital. He stated that were this a legal matter involved, he would state the fact under oath. This was disconcerting. However, three additional men who had been cyanotics were found who like the first four, remembered distinctly that their shoes had been dyed the day they went to the hospital. The other nine of the seventeen men had gone overseas and could not be reached.

TEST OF THE DYE

It only remained to get some of Toney's dye and test it in the laboratory. I obtained a few ounces under false pretenses. The name of the manufacturer could not be learned, since Toney had a sort of monopoly of this process of darkening russet shoes, and kept it a secret. The dye was found to be a dark brown, oily liquid with a pleasant almond odor, which soon became suffocating. Some of it was tried on white mice. It was found that 8 drops on cotton, placed in an open half pint Lightning jar containing a white

mouse, killed the animal in four or five hours. For a few minutes the animal would not object to the odor of the dye, then it would grow restless and seek to escape, then dyspneic and drowsy and finally unconscious. Before this stage it would recover, if put in the fresh air; after this it would always die. It would become distinctly cyanotic. At necropsy the blood would be almost black and show the presence of methemoglobin by the spectroscope. It now seemed important to try the dye on a human being. This I did on myself, dying my own shoes with some of Toney's preparation. After wearing the shoes four hours, I felt nausea, headache and visual disturbances. Well satisfied with the result of the experiment and enthusiastic for carrying it further on some one else, I removed the shoes. I did not become cyanotic.

November 12, two men in the laboratory, Private Chester Garden and Lieut. E. F. Blair, S. C., having had the matter fully explained to them, volunteered to let me dye their shoes with Toney's dye, by Toney's method. Private Garden was not visibly affected by wearing his shoes six hours, but he complained of headache and nausea, which lasted eighteen hours. Leiutenant Blair, whose shoes were more thoroughly saturated with the dye, after being more thoroughly cleaned with alcohol, became slightly cyanotic in six hours. In seven hours his lips and finger-nails were purple, and he looked ghastly. He had no complaint. His feet "burned" a little, but caused no real discomfort. His blood, obtained by the puncture of the ear lobe, was abnormally dark. The red cells had fallen slightly during the seven hours, from 4,100,000 to 3,900,000. The white cells rose from 9,000 to 12,000, the differential count being unchanged. The hemoglobin by Tallqvist's scale was above 100 and could not be read; it had been 90. By Sahli's it was 95 per cent; it had been 90 per cent. Spectroscopic examination of the blood revealed the normal absorption bands of oxyhemoglobin; sufficient methemoglobin was not present to be detected by a direct vision spectroscope.

NITROBENZENE POISONING

Chemical examination of the dye, later confirmed by the department laboratory, showed the presence of nitrobenzene, also called nitrobenzol, and in trade, oil of mirbane. It is an oily liquid with the odor of bitter almonds, which sometimes produces poisoning in the coal-tar color industries, explosive works, and pharmaceutic laboratories, poisoning whose symptoms are nausea and vomiting, headache, vertigo, tinnitus, visual disturbances, local burning sensation, dyspnea, and marked cyanosis with the formation of methemoglobin. The presence of nitrobenzene in a shoe dye was not surprising to one of the oldest and largest manufacturers of shoe dyes and polishes in this country, since such dyes contain anilin made from nitrobenzene. This firm had never heard of poisoning as a result of wearing dyed shoes.

It is interesting to note that poisoning by nitrobenzene, while unusual, is not unknown. Blyth[1] notes a case in which death of a man resulted in nine hours by the accidental spilling of nitrobenzene on his clothes. It will be surprising if similar cases of cyanosis have not occurred at other camps. I have a record of one case at this camp in which the dye was not bought at Toney's, but at a well known shoe firm in Jacksonville, which has branch stores in all of the large cities.

The poisonous properties of these dyes are soon lost from the shoes. In three or four days after the shoes have been dyed, it is apparently safe to wear them.

1. Blyth, A. B.: Poisons: Their Effects and Detection, New York, the D. Van Nostrand Company, 1907.

FURTHER OBSERVATIONS ON SEX GLAND IMPLANTATION

G. FRANK LYDSTON, M.D.
CHICAGO

I desire first briefly to present observations of several cases hitherto reported, with special reference to the present condition. The first of these cases was exhibited at the Urological Society of Chicago in October, 1917, and the second at the November, 1917, meeting.

CASES ALREADY REPORTED

CASE 1.—At the age of 17 an injury to the right testis was sustained. This was followed probably by a hematocele and traumatic orchitis. When the swelling subsided the gland had "entirely disappeared." The left testis atrophied to a moderate degree subsequent to the injury. Virility was unimpaired, but the patient developed distinctly feminine secondary sex characteristics.

At the age of 29 an infection of unknown character attacked the remaining testis, with resultant pain in the left iliolumbar region, left spermatic cord and testis. The clinical history of the case at that time is not available. According to the patient's story, the testicle did not swell, but there was considerable fulness of the spermatic veins. Within three weeks the organ had completely atrophied, and some weeks later the case was referred to me.

At the time of my examination the patient was of healthy appearance, but excessively fat. The beard was almost negligible, the mammae moderately large, and the pelvis distinctly feminine. Sexual power, which had been "satisfactory" until after the loss of the second testicle, had entirely disappeared. During the years subsequent to the original injury the patient had not been physically as fit as before, and for about a year he had been physically and mentally quite inefficient, which inefficiency rapidly increased after the loss of the remaining testicle.

Palpation disclosed scarcely a vestige of tissue at the end of the spermatic cords. Only a small body somewhat larger than a grain of wheat could be felt on each side. The penis was of very moderate development with a long prepuce, but otherwise normal.

Aug. 1, 1915, I implanted on this patient both testes taken from a boy of 14, dead of a crushing injury. The glands were removed six hours after death and placed in sterile salt solution. The operation was performed thirty-nine hours after the death of the donor.

The results of the implantation were extremely satisfactory, the patient regaining his physical, sexual and mental efficiency. There was a marked change in the secondary sex characteristics so far as the excessive fat was concerned.

Nov. 15, 1918, more than three years and three months subsequent to the operation, the patient reported as still in satisfactory condition. He had entirely lost his fat excess and was robust and athletic in appearance. The implanted testes were still in evidence, firm and obviously sclerotic, and about the size of a good sized hazelnut. The remnants of the testes present at the time of operation had increased to the size of a large pea. There apparently had been no decrease in the size of the implanted organs after the first eighteen months.

CASE 2.—The patient, aged 19, following vaccination at the age of 13, developed a secondary infection of the testes, resulting in almost complete atrophy of both organs within a few weeks. Coincidentally the penis became distinctly smaller. The case was examined by several surgeons, who

diagnosed retained testicle on the left side, and suggested operation. At the age of 17 the patient came under my observation.

The boy was tall and healthy looking, with distinctly feminine secondary sex characteristics. The pelvis, mons veneris, and mammary glands were suggestive of a girl just entering on puberty. No beard was in evidence. There was a bare suggestion of hair on the pubes. The left testicle was a small, soft, barely perceptible nodule about as large as a small pea, just below the external inguinal ring. The right testicle was soft and about the size and shape of a small Lima bean. The penis was no longer than that of a well-developed child of 5 or 6 years of age, slightly "hooded," and suggested an enlarged clitoris. Psychically the boy was normal despite the absence of any signs of virility.

The case passed from under observation and subsequently an ill-advised operation was performed on the left side for "retained testis," with resultant destruction of what little gland tissue remained.

At the age of 19 the boy again reported. Implantation of testes was consented to and the operation performed, Oct. 27, 1916. The material used was taken from a healthy boy, aged 15, dead twenty-four hours of gas poisoning. The glands were refrigerated for thirty-two hours.

The secondary sex characteristics in this case became more masculine, there was a considerable growth of pubic hair, the penis increased greatly in size, and virility was established.

I last examined this patient late in June, 1918, one year and eight months after implantation. The condition of the testes was essentially the same as in Case 1, and apparently they had not grown smaller since the patient was exhibited at the Urological Society in November, 1917. It is interesting to note that this boy passed the Army examination and is now a Second Lieutenant in the U. S. Army in one of our American camps. In a recent letter he reported a considerable increase in the growth of his beard.

ADDITIONAL CASES

CASE 3.—A paretic dement, aged 46, in whom the syphilitic condition had been very insidious, and some six years had elapsed since the symptoms were noticed, had been unable to attend to any business affairs of any consequence for several years and, for obvious reasons, was not permitted to go about the city streets unattended. He complained rather strenuously of loss of sexual power.

In the hope of retarding the progress of the paresis, a successful double implantation was performed in August, 1917. The glands used were taken from a boy, aged 16, dead of accident twenty-four hours. They were refrigerated for thirty hours. The effect of the implantation was in a general way quite remarkable. The patient became brighter and his physicial condition greatly improved. Sexual activity was so increased that he was rather inclined to complain of it. His mental condition was so far improved that he was permitted to go about alone, and was able to attend to a little business. It is proper to state that he had antisyphilitic treatment more or less continuously. The fact remains, however, that the case was at a standstill and there was no marked improvement until the implantation was done.

About fourteen months after implantation, the improvement apparently having continued, the patient suddenly developed violent one-sided convulsions, lapsed into coma, and died. There was no necropsy. A diagnosis of probable cerebral thrombosis was made.

CASE 4.—A man, aged 21, whose sexual organs were congenitally undeveloped, had moderately marked feminine secondary sex characteristics, and his beard was very slightly in evidence. His general physical development was imperfect, the patient being 6 feet 3 inches in height and weighing 130 pounds. There was very moderate sexual activity. Unsatisfactory and unpleasurable experimental coitus had been performed on three or four occasions. The patient complained of general weakness and stated that he had very little physical endurance. There was no sexual psychopathy. There was a fair amount of pubic hair and very moderate penile development. Only on painstaking examination could any suggestion of testes be felt. Several surgeons who previously had examined the patient had diagnosed "retained testes." The glands were about the size of a navy bean, and so soft as to be barely perceptible.

A successful double implantation was performed, June 15, 1918, the material being procured from a boy of 16, dead eighteen hours of a crushing injury of the skull. The material was kept on ice for thirty-six hours.

The patient was examined, Oct. 1, 1918. There had been a marked increase in size and improvement in consistency of the patient's own testes. The physical condition was vastly improved. His color was excellent and he had gained 20 pounds in flesh. As he expressed it, he never felt so well in his life. He said, however, that while erections were more vigorous, he experienced no sexual desire. The penis appeared to be of firmer consistency and slightly better developed than at the time of operation. He had been overindulging in physical exercise, which possibly might explain the lack of desire. Nov. 12, 1918, improvement in the general condition was sustained, but there was still a lack of sexual desire.

The patient again reported for examination Jan. 6, 1918. There had been still further development of his own testes. The implanted glands were in excellent condition and had not appreciably shrunken since the last examination. Sexual power and desire apparently were normal.

CASE 5.—A professional writer, aged 29, suffered from profound sexual neurasthenia, and complained of the entire gamut of symptoms characteristic of such cases. A careful examination that I made and previous examinations by numerous competent neurologists had elicited no organic nervous lesion. (Since the implantation I have discovered floating right kidney.) The pivotal point of his symptoms was simply pain with extreme hyperesthesia of the skin and pain referred to the bladder. As everything else had been tried in this case, I suggested an implantation, chiefly for the psychic effect.

A successful implantation of a single testis, taken from the body of a boy of 17, dead of accident, and preserved on ice in saline solution for thirty-eight hours, was performed, Sept. 7, 1918.

There was marked improvement in the patient's general condition, but no change in the nervous symptoms of which he complained at the time of the last examination, about six weeks after implantation. The implanted gland was slowly atrophying. Nephropexy was suggested as a "possible" source of improvement. How frequently this operation is disappointing in neuropathies the surgeon is well aware.

CASE 6.—A physician, aged 40, complained of neurasthenic symptoms from overwork, associated with an annoying tachycardia.

Implantation was performed at the patient's request, the companion testicle to the one used in Case 5 being employed. Local results were satisfactory.

The patient has not reported recently, but a month after operation he wrote that he was in much better general condition, and that the tachycardia had subsided.

CASE 7.—A man, past 50 years of age, complained of failure of sexual power. He said that sexual intercourse was possible only when he was under the influence of alcohol. The subject is distinctly melancholiac. An implantation was suggested in the hope that the combined psychic effect and the stimulating action of the sex hormone would remedy the obviously psychopathic condition.

Testes taken from a boy of 18, dead of accident, were used, the implantation being done forty-eight hours after the death of the donor. The material was refrigerated for more than thirty hours.

When this case was last heard from, about six weeks after operation, the implanted glands were in excellent condition. The patient stated, however, that he still was unable to perform the act of intercourse except when under the influence of liquor. On one occasion, however, subsequent to the operation, while under the influence of alcohol he indulged, according to his own account, four times in succession, an extent that should be considered excessive for a normal man of his age.

As this patient drifted away from observation, I do not know the present condition of the implanted glands. The patient recently wrote that his sexual status was not improved.

CASE 8.—A man, aged 27, had marked feminine secondary sex characteristics and congenitally undeveloped sexual organs. Not only were the testes almost imperceptible, the case having been pronounced one of retained testes, but there was no scrotal development. In order to prepare a field for implantation, it was necessary to "cup" the scrotal region with a vacuum pump for some weeks prior to the implantation. The pubic hair was exceedingly sparse. There was practically no hair in the normal location of the scrotum. The patient was exceedingly spare, being 5 feet 8¾ inches in height, and weighing 120 pounds. The development of the mons veneris and pelvis was especially feminine in character.

Oct. 8, 1918, a double implantation was performed. The material was taken from a boy of 17, dead of accident. The testes were refrigerated in boric solution on ice for forty-eight hours. The implanted glands in this case were quite large, and the pseudoscrotum which I had succeeded in "pocketing" was so thin that I was very apprehensive of sloughing.

There was sloughing of a circular area of the skin about one-fourth inch in diameter over the most prominent portion of the gland implanted on the right side. There was a slight necrosis of the fascia at this point, and there is still a small sinus giving exit to a small quantity of serous fluid. Five weeks after operation the implanted glands were still in good condition and obviously "alive." There has been an increase in the quantity and an increased coarseness of fiber of the returning pubic hair. Quite a quantity of hair is appearing on the lower part of the scrotum. The patient states that he now has vigorous and prolonged erections and that at the time of erection the penis is distinctly larger than before operation. The organ is slightly firmer when flaccid. The patient's color and general condition is much better, his nutrition having greatly improved.

As to the ultimate results in this case, it is to be remarked that at the age of 27 the outcome is much less promising than in cases in which operation was performed at an earlier period. It is my belief that when implantation is done in cases of like character at an age not too far from puberty, results as good as those obtained in Case 2 reasonably may be expected. In such cases as Case 2 reimplantation should be followed by even more satisfactory results.

Dec. 15, 1918, the sinus had closed and the implanted testes were in good condition.

The next case is especially gratifying to me because the operation was performed by another surgeon. Dr. L. L. Stanley, of the California State Prison at San Quentin, was so courteous as to describe the case to me with permission to publish a report of it in connection with this series.

CASE 9.—A man, aged 25, evidently a moron, committed for attempt at burglary, had been kicked in the testicle, five years previously, with following inflammation, swelling, and subsequent atrophy. At the time of operation the testes were the size of "olive pits." The patient was tall, thin, anemic, and very dull and apathetic. He originally had been a teamster.

The donor was a negro who was hanged for murder. The glands were refrigerated for some hours. The glands were removed from the donor fifteen minutes after death. An anastomosis of the vas deferens was done on the right side. The left "implant" was inserted partially within the tunica vaginalis and held in place by several sutures, without anastomosis. The testes were not decorticated.

Seven weeks after operation the doctor reported that the testes were firm and were not atrophied and were "resting nicely in the scrotal sac." The patient had gained 15 pounds and had become active and alert—in fact, he was improved in every way—and sexually had become very active.

Three months after operation, the right testicle had atrophied slightly, but was still firm and well shaped. The left testicle was in excellent condition. The doctor said: "He now has erections nightly and frequently in the daytime, something he has never had before. He is much stronger and livelier and gets about much more actively. It is reported that whereas before he was slow and inactive and seemed about 'half dead,' he now speaks out quickly, has improved mentally, and has livened up to a marked degree. He now will 'square away' if anybody 'quips' him, and he can make a quick retort, whereas before he would pay little attention to any offense offered him."

COMMENT

The course of all these cases was practically afebrile and attended by no pain during the postoperative treatment. In Cases 4 and 5 the patients complained of some reflex pains in the spermatic cords for a few weeks subsequent to implantation.

I wish to note especially the result obtained by Dr. Stanley, particularly in the matter of "cross-racial" implantation. Should the testes in this case permanently endure or atrophy no more slowly than when the donor is of the same race as the recipient, it biologically would be a most interesting and a practically valuable observation.

That there is any advantage in the anastomosis of the vas is open to question, first, as to the betterment of nutrition, and secondly, as to the preservation of spermatogenic function. I myself believe that we run more risk of failure of the implant from the greater traumatization of the tissues necessary for anastomosis. Then, too, it is my belief that the spermatogenic epithelium of the tubules degenerates in all cases rather promptly. This, however, is a point that can be determined only by examination of the semen, as to which Dr. Stanley has not yet reported. As bearing on this point, I wish to recall a case of my own in which a fistula formed and persisted for five or six weeks after the implantation of a decorticated gland. The secretion from this fistula contained immature spermatozoa. In dissections that I have made of implanted testes at various times after operation there apparently has been an extensive proliferation of the cells of Leydig and a coincidental encroachment on and destruction of the spermatogenic tissue proper.

An observation which seemingly is worthy of note is the fact that the implanted glands atrophy and disappear more rapidly when the recipient has well-developed testes of his own. The apparently permanent local results thus far obtained were in cases in which the patient had very little gland tissue, as in Cases 1 and 2. A sort of "parasitic" action of the patient's own glands on the implanted organs suggests itself. Possibly the patient's testes appropriate nutritive pabulum which otherwise might be available for the implanted organs. In any event, therapeutic results are obtained and sustained even when the implanted glands eventually disappear. When, as in Cases 1 and 2, the patient's own remnants of testis tissue develop after the implantation, it is reasonable to expect permanence of any improvement that occurs in the patient's condition.

Since this paper was written, I have examined a patient whose case was previously reported, on whom an implantation was done at the age of 69 for possible improvement of senility and failing sexual power. The results in this case were eminently satisfactory, and nearly two years later still endure, although the implanted glands practically have disappeared.

25 East Washington Street.

TRENCH FEVER

A CRITICAL REVIEW *

WILDER TILESTON, M.D.
NEW HAVEN, CONN.

In the spring of 1915 there began to appear in the British army in France a large number of cases of an acute infection resembling influenza. More careful investigation, however, soon showed that the disease was not influenza, but a new clinical entity. Since the early cases arose chiefly among the soldiers at the front line, the name "trench fever" soon came to be used.

The disease was described first by Graham[1] in September, 1915, while the designation "trench fever" was used first by Hunt and Rankin,[2] who gave an excellent clinical description of the disease.

Briefly, trench fever is characterized by the sudden onset of fever, with dizziness, headache, backache, and pains in the legs, which later become localized in the shins. The temperature curve is often characteristic, showing an intermission on the third or fourth day, followed after an interval of a day or two by a second rise. The final defervescence takes place at about the eighth day, and is followed by one or several relapses at fairly regular intervals. There is no mortality.

The disease has been and is very prevalent in the British army in France, though apparently it is much less common in the French, German and Italian armies. It has been reported only in isolated instances in the British armies operating elsewhere. A few cases have been reported in England among those brought in contact with soldiers invalided home from France with the disease.

As first encountered, the disease occurred only in two groups of men: (*a*) those who had been recently in the front line trenches, and (*b*) the personnel of hospitals in which trench fever patients were being cared for. Later it became more widely disseminated.

SYMPTOMS

The onset of the disease is usually sudden; those affected may fall while on duty. The first symptoms are dizziness, headache and pains in the lumbar region and legs, associated with fever. Chilliness is common, but true chills are unusual. There may be vomiting. Headache is not very severe, is most often frontal, and frequently is referred to as behind the eyes, which may be painful on motion. Exceptionally the headache may be occipital and associated with stiffness of the neck, so that the suspicion of meningitis arises.

The lumbar pain may be so severe at the onset that smallpox is suggested. In the legs it appears at first to be muscular in its seat, later becoming localized to the tibiae; it is rarely in the joints. There is often pain in the splenic region. Abdominal pain is common, and is either generalized, or confined to the right lower quadrant or the left hypochondrium. Appendicitis may be simulated. The pain is usually accompanied by well-marked hyperesthesia of the skin, most often on the outer aspect of the legs, but also on the thighs and in the precordial and left axillary regions. This hyperesthesia constitutes a sign of considerable diagnostic importance, as it is rarely seen in the diseases likely to be mistaken for trench fever.

Prostration is often very marked, or it may be almost lacking. Constipation may be present, but it is not the rule, and diarrhea is absent.

On physical examination, the eyes are bright; the conjunctivae, as in so many acute infectious diseases, are almost invariably injected, but there is no exudate. Nystagmus on lateral motion of the eyes occurs in about 85 per cent. of the cases; it is an early sign and persists throughout the disease; and since it is seldom seen in other acute infections, it constitutes a valuable diagnostic sign. Herpes is rare. The tongue is clean or slightly coated. The respiratory tract, in contrast with influenza, shows no signs of inflammation. The pulse rate is usually low in proportion to the fever during the original attack, but with relapses there is a tendency toward tachycardia.

Many writers have stated that the spleen is not enlarged, but this is an error. In the experimentally produced disease, the American Red Cross Commission[3] found palpable enlargement at some period of the disease in 85 per cent. of the cases, and within a few hours of the onset in 25 per cent. The enlargement may be first encountered at almost any stage of the disease, and persists for a variable period, sometimes only for a day or two. These facts probably account for the failure of many observers to detect the enlargement, which is usually quite moderate in degree. In the disease as it occurs in nature, the frequency of splenic enlargement is probably about the same as in the infection when produced experimentally.

A characteristic rash appears in about 50 per cent. of the cases, but it is so evanescent that it has been overlooked by most observers. It is well described by Drummond,[4] and by the American Red Cross Commission.[3] It consists of scattered red macules, about the size of rose-spots, disappearing with pressure and rarely elevated. It occurs chiefly on the trunk, in successive crops, during the original attack, and in relapses.

Examination of the blood reveals in most cases a leukocytosis during the primary attack and in relapses.[5] In some cases, however, leukopenia occurs. At the time of a relapse the picture is more or less characteristic, in that neutrophils, lymphocytes and large mononuclears are all simultaneously increased. The red cells show nothing of importance. The urine rarely shows albumin and casts.

TEMPERATURE

According to McNee, Renshaw and Brunt,[6] two types may be distinguished, the short and the long. In the former there is usually an intermission of the fever about the third day, followed by a rise after a day or two of normal temperature; the patient becomes afebrile at the end of seven or eight days and either recovers promptly or suffers a single relapse.

The long type shows a very characteristic temperature curve, owing to the presence of relapses. These are usually three or four in number, and are often spaced at regular intervals, resembling in their peri-

* Read before the New Haven County Medical Society, April 25, 1918, and published with additions to bring it up to date.

1. Graham, J. H. P.: Lancet **2**: 703, 1915.
2. Hunt, G. H., and Rankin, A. C.: Lancet **2**: 1133, 1915.
3. Trench Fever, Report of Commission, Medical Research Committee American Red Cross, Oxford University Press, 1918.
4. Drummond, H.: Quart. J. Med. **11**: 363, 1918.
5. Perkins, H. W., and Urwick, R. H.: Quart. J. Med. **11**: 374, 1918.
6. McNee, J. W.; Renshaw, A., and Brunt, E. H.: Brit. M. J. **1**: 225, 1916.

odicity the febrile attacks of rat-bite fever. The interval between relapses ranges from four to thirteen days, but is usually fairly constant for the individual case. The temperature during the relapse is often as high as in the original attack, but rarely remains up for more than thirty-six hours, so that the chart has a "spiky" appearance. There is a tendency for the fever to be lower with each succeeding relapse. Between the attacks the patient feels fairly well, though slight pains in the shins, aggravated at night, serve to remind him that he is not through with his disease. During the relapse the symptoms of the original attack recur with more or less violence.

During the summer of 1915, according to these authors, the short type was much the more common, but in the following winter the long type[7] was encountered more frequently. Since this form incapacitates the soldier for from four to six weeks, and occasionally for months, trench fever causes a very considerable wastage of men.

In addition to these two types, there should be added a more chronic one, which has received little attention from writers at the front because such cases are invalided back to England. Here, following a typical history of acute trench fever, there is a chronic state of ill health. The patient suffers from pains in the shins, aggravated at night and on exertion. The temperature is not quite normal, but shows a slight rise to 99.5 or 100 in the evening. From time to time there is a slight further rise in the temperature with increase of the pain. Such a condition may last for many months.

Complications are conspicuous by their absence. A fairly common sequel is the condition variously labeled "soldier's heart," disordered action of the heart (D. A. H.) and effort syndrome (Lewis). Among the numerous cases of this condition seen by the reviewer at the Military Heart Hospital at Hampstead, the onset could often be traced to an attack of trench fever.

ETIOLOGY

That trench fever is caused by an infectious organism was proved by the work of McNee, Renshaw and Brunt.[6] These investigators were able to transmit the disease to healthy soldiers by the intravenous or intramuscular injection of whole blood obtained from cases of trench fever, and the blood of such experimental cases was found capable of causing the disease in other soldiers. Experiments with washed red corpuscles were also successful, while those with plasma and serum were inconclusive. Filtered plasma and serum, and filtered extracts of the red corpuscles were found incapable of producing the disease. They concluded that the organism was probably contained in the red blood corpuscles or in the leukocytes, and that it was not filtrable.

These experiments have been recently confirmed by the Trench Fever Commission of the Medical Research Committee, American Red Cross, headed by Major R. P. Strong.[8] Very carefully controlled experiments were made on healthy volunteers from the American army in France. Fifteen out of sixteen soldiers inoculated with whole blood, and three out of four inoculated with washed red corpuscles, developed the disease. In contrast to their predecessors, however, they obtained positive results in all five cases inoculated with plasma. Plasma, serum, and extracts of red corpuscles, after filtration through a Berkefeld filter, were found incapable of reproducing the disease. The blood was proved to be most infectious during the first two days of fever, and more so in the original attack than during a relapse. The authors concluded that the organisms were contained in the blood, particularly in the plasma, and that some were thrown down with the red cells in the process of centrifugation.

The search for the organism thus far has led to conflicting results. The marked tendency to relapses at rather regular intervals is very suggestive of a spirochetal origin of the disease. There is close resemblance of the temperature charts to those of rat-bite fever and relapsing fever, two diseases known to be caused by spirochetes. Thus far spirochetes have been found in the urine in trench fever by Nankivell and Sundell,[9] by Patterson,[10] and by Reimer.[11] The first named found them in twelve out of fifteen cases. They were present in small numbers and not on all occasions, being most often found from the fourteenth to the sixteenth day. The work of Stoddard,[12] however, has shown that great care must be used in interpreting the presence of spirochetes in the urine. He found spirochetes of various shapes in the urine, and in urethral smears in 33 per cent. of 100 healthy men. He noted no difference in the spirochetes in smears in trench fever patients from those in healthy controls.

Dimond[13] reported the finding of hemogregarines in the peripheral, splenic and hepatic blood in twelve cases of trench fever. This organism is a protozoon hitherto found in lizards, rats and dogs, but not in man. His findings have not been confirmed as yet, and his published work is far from convincing.

Blood cultures have always yielded negative results, except in the hands of Houston and McCloy,[14] who reported the presence of the enterococcus, a variety of streptococcus found in the normal intestinal tract. Animal inoculations with the blood of trench fever patients have remained negative.

METHOD OF TRANSMISSION

That trench fever is contagious there can be no doubt. In many instances soldiers have been infected by sleeping with sufferers from the disease, and hospital orderlies often have taken it from patients in the wards. The circumstances under which it arises suggest strongly that it is in some way connected with the living conditions in the trenches. Hunt and McNee[7] state that a history of lousiness was obtained in most of their patients.

That the usual method of transmission is through the body louse is rendered certain by recent experimental work. Davies and Weldon[15] were the first to convey the disease in this way, obtaining a positive result in one out of two experiments in which lice were put to feed on trench fever patients and then on the authors. To prove the point, much more extended experiments were necessary, and these have been recently forthcoming at the hands of the American

7. Hunt, G. H., and McNee, J. W.: Quart. J. Med. **9**: 442, 1916.
8. Strong, R. P.; Swift, H. F.; Opie, E. L.; MacNeal, W. J.; Baetjer, W.; Pappenheimer, A. M., and Peacock, A. D.: Report on Progress of Trench Fever Investigations, Am. Red Cross M. Bull. March, 1918; J. A. M. A. **70**: 1597 (June 1) 1918. Trench Fever (Footnote 3).
9. Nankivell, A. T., and Sundell, C. E.: Lancet **2**: 672, 1917.
10. Patterson, S. W.: Brit. M. J. **2**: 418, 1917.
11. Reimer: München. med. Wchnschr., Jan. 11, 1917.
12. Stoddard, J. L.: Brit. M. J. **2**: 416, 1917.
13. Dimond, L.: Lancet **2**: 382, 1917.
14. Houston, T., and McCloy, J. M.: Lancet **2**: 632, 1916.
15. Davies, F. C., and Weldon, R. P.: J. Roy. Army Med. Corps **30**: 92, 1918.

Red Cross Commission,[3] already referred to. Twenty-two men were exposed to infected lice, and four to noninfected lice, while eight were kept as controls under similar conditions, but free from lice. From twenty-five to 100 lice were placed on each volunteer, after feeding on patients with trench fever, and were allowed to remain for thirty days, or until trench fever developed. In certain cases one half of the lice were removed from the first volunteer from forty-eight to sixty hours after the time of feeding on the trench fever patient, and transferred to a second volunteer. Twelve of the twenty-two men exposed contracted the disease, after an interval of from sixteen to thirty-five days. In four cases the second volunteer developed trench fever, the first volunteers having been previously exposed to the lice for about two days. This renders it probable that the infection was not directly mechanical, but that the lice really harbored the organisms. The controls remained healthy.

The method of transmission was still further elucidated by the work of Byam and his associates.[16] They found that biting by infected lice was not of itself sufficient to transmit the disease, but that the excreta of such lice, rubbed into the scarified skin, would do so with great regularity. The excreta were found to be infective only after an interval of seven days or more after feeding on the trench fever patient; this fact suggests the possibility that the organism undergoes a developmental cycle within the louse. Lice were found to remain infective for a period of at least twenty-three days after feeding on the patient. These experiments indicate that infection in nature probably occurs by rubbing in the louse excreta in the process of scratching.

NATURE OF THE VIRUS

The experiments with filtered blood, already described, all proved negative. A filtrable organism, however, is often held back by the filter when contained in a colloidal solution, such as blood. The Red Cross Commission was able, however, to infect with filtered urinary sediment, and with filtered louse excrement extract, so that the organism may be regarded, for the present at least, as a filtrable one. The virus resists drying and moist heat at 60 C. for thirty minutes, a temperature that kills lice and their ova. They are killed, however, by a temperature of 70 C. for thirty minutes.

The question of immunity after an attack of trench fever is difficult to answer, on account of the long interval of good health that may obtain between relapses. Byam, however, was able to infect a patient who had completely recovered from the disease, while four other patients with chronic trench fever proved refractory.

The incubation period of the disease when produced by the inoculation of blood varies from five to twenty-four days, and in the experiments with lice from sixteen to thirty-five days. In the disease as it arises under natural conditions, it appears to be from fourteen to twenty-four days.[7]

In the absence of fatal cases, the pathology remains unknown.

DIFFERENTIAL DIAGNOSIS

The disease most likely to be mistaken for trench fever is influenza, using the term in its wide sense to include all griplike attacks, whether due to the influenza bacillus or to the streptococcus, *Micrococcus catarrhalis*, etc. The two diseases have in common the sudden onset with fever and generalized pains. The prostration, however, is usually less in trench fever than in influenza, and there are no signs of inflammation of the respiratory tract, while in influenza the shin pains and relapsing type of fever are absent.

From dengue it is distinguished by the character of the eruption, the presence of leukocytosis, and by the fact that dengue has never been reported north of the forty-first degree of latitude.[17]

Relapsing fever is easily excluded by the examination of the blood for spirochetes, and rat-bite fever by the history, the absence of enlargement of the regional lymph nodes, and the different type of eruption.

From typhoid fever and Malta fever it is readily differentiated by the clinical course and by cultural and serologic methods.

PROPHYLAXIS AND TREATMENT

The prevention of trench fever, like that of typhus, rests principally on efficient methods of destruction of lice. If the patients are kept free from lice, isolation is not necessary. Since the blood has been shown to be infectious during a relapse, patients should not be returned to duty until it is unlikely that more relapses will occur.

Up to the present, no effective method of treatment has been devised. The early employment of rest in bed probably shortens the course of the disease. For the pain the salicylates or coal-tar products may be sufficient, but morphin is necessary in the severer cases. Dimond[13] reports relief to the pain in chronic cases from the use of lumbar puncture. The injection of the serum of convalescents has been tried, but without success. Arsphenamin is ineffective. For the symptoms of irritable heart in chronic cases, Byam recommends thyroid extract.

Those especially interested in the subject should study the report of the Trench Fever Commission of the American Red Cross,[3] which contains detailed reports of its experimental work, and of the clinical aspects of the disease as experimentally produced, together with a complete summary of the literature.

16. Byam, W.; Carroll, J. H.; Churchill, J. H.; Dimond, L.; Lloyd, L.; Sorapure, V. N., and Wilson, R. M.: Trench Fever, J. A. M. A. **71**: 21, 110, 188, 1918.

17. Van der Burg, in Mense: Handbuch der Tropenkrankheiten **2**: 95.

Milk.—The National Commission on Milk Standards, after receiving reports on prices paid for milk to the producer and prices at which milk is sold to the consumer, and the mortality statistics from a number of the large cities of the country, has made the following statements regarding milk: The price of milk to the consumer from 1914 to 1918 has in general increased from 50 to 100 per cent.; the quantity consumed has fluctuated, but at the time of the report was not less than the normal of usual supply; there has been an improvement in infant mortality and a lessening of diarrheal diseases among children under 2 years of age, and this improvement has not been checked by the advance in the price of milk between 1914 and 1918; there is evidence of serious condition of undernourishment among children of school age, due, as the commission believes, to improperly regulated diet, and to poverty, but to a larger extent to lack of appreciation of the value of milk as compared with other foods; other foods have increased in price in greater proportion than milk; even at present retail prices milk is the most economical animal food that can be purchased; good nutrition cannot be secured on diets from which milk, eggs and leafy vegetables are absent, and the use of these classes of food should be extended.

OUTBREAK OF TYPHOID FEVER AMONG AMERICAN TROOPS IN ENGLAND *

C. B. HAWN, M.D. (ALBANY, N. Y.)
Captain, M. C., U. S. Army

J. D. HOPKINS, M.D.
Captain, M. C., U. S. Army

AND

F. M. MEADER, M.D. (ALBANY, N. Y.)
Major, M. C., U. S. Army

LONDON, ENGLAND

July 11, 1918, there appeared at an American rest camp in England the Fourth Casual Company, J. A. R. D., Camp Cody. Soon after its entrance to the camp several soldiers with fever were brought to Camp Hospital No. 34. At the time many cases of influenza were present among the soldiers who were passing through this camp, so that no special significance was attributed to the symptoms they presented. After a few days' observation the commanding officer of Camp Hospital No. 34 suspected that the cases might be typhoid fever. At about the same time the commanding officer of Camp Hospital No. 36 transferred a few patients to U. S. Base Hospital No. 204. Suspicion of typhoid fever was soon aroused, and blood cultures were ordered by the attending medical officer. The district sanitary officer of United States troops inspected the patients and took specimens of blood in all of the cases. *Bacillus typhosus* was isolated in eight out of ten cases two days later. During the next month *Bacillus typhosus* was isolated from the blood or feces in ten more cases. Altogether, thirty-eight soldiers developed typhoid fever. *Bacillus typhosus* was isolated in eighteen of these cases.

EPIDEMIOLOGY

The organization left Camp Cody, Deming, N. M. June 15, 1918, for Camp Merritt, N. J. While en route, June 18, the organization stopped at Meridian, Miss., and was taken for a swim in a lake. The organization arrived at Camp Merritt, June 21, embarked, June 28, and arrived at Liverpool, July 10. After disembarkation the organization proceeded to the rest camp at Romsey, England. At the British port of debarkation, three cases were left at Red Cross Hospital No. 4, and it is reported that two other cases were left at some station en route to the camp. At the American Rest Camp forty soldiers were found ill and transferred to United States Base Hospital No. 204, where a diagnosis of typhoid fever was made on thirty-eight of them.

From a study of the history of each case it was noted that the date of onset varied over a period of about a month. The first patient was ill on leaving Camp Cody. The second case developed, June 19; the third, June 21; the fourth, June 24; three developed on the 26th, four on the 29th, and five, July 6, after which a case developed every day up to the time the organization arrived at the American rest camp at Romsey.

The organization left the American rest camp before the diagnosis of typhoid fever had been established, and it has since been learned that fifty-seven other cases developed. This makes ninety-eight cases from a total of 248 men.[1]

In seeking the sources of the infection of this outbreak, we naturally turn to the patient who was first ill:

F., 1416995, W., private, Fourth Casual Company, J. A. R. D., Camp Cody, the onset of whose illness seems very obscure, stated that he had rheumatism at Camp Cody all the time he was there. He said that he was at the base hospital for two months. He stated that he did not feel well when he left Camp Cody and did not feel any different en route. He proceeded with his company to the American rest camp at Romsey, England, and was admitted to the hospital, July 11, with a doubtful diagnosis. He was transferred to U. S. Base Hospital No. 204, July 16. The patient's temperature and pulse curves would indicate that his illness had continued for a considerable period. It was quite typical of a convalescent period of typhoid fever. This patient went with the company to bathe in the lake at Meridian, Miss.

The service record shows that inoculation with triple typhoid vaccine was completed, Oct. 23, 1917, and paratyphoid vaccine, Oct. 28, 1917. The patient stated that he received at Columbus, Neb., five doses and at Camp Cody two doses of typhoid vaccine.

Another history also is of interest in connection with the source of this outbreak:

B., 1415881, W., private, Fourth Casual Company, J. A. R. D., Camp Cody, stated that he did not feel well when he left Camp Cody, June 15, and that he had stomach trouble and severe diarrhea en route to Camp Merritt. He said that at Camp Merritt the doctor gave him some pills to relieve his trouble. The illness continued during his voyage across the ocean. He continued with his company to the American rest camp and was admitted to Camp Hospital No. 34, July 11, with no diagnosis and was transferred to U. S. Base Hospital No. 204, July 14, as a suspected case of typhoid fever. The clinical record of this case shows that when the patient first entered the hospital his fever and pulse rate was lower than it was three or four days later, so that probably the real date of the onset of his typhoid fever was about July 10. One should, however, note that this increase in fever beginning about July 10 may have been a recrudescence of typhoid fever which began at the time he left Camp Cody.

The patient's service record states that inoculation with triple typhoid vaccine was completed, Oct. 30, 1917. The patient stated that he received three doses of typhoid vaccine at Camp Dodge.

From Table 1 it will be noted that a considerable group of cases developed during the latter part of June and early part of July. This suggests a common source of infection. There are two possibilities:

These patients became infected either in the train early in the journey or by bathing in the water at Meridian, Miss., June 18. The water may easily have been infected by one or two typhoid patients that were present in the organization at the time. In the remaining cases of typhoid the men undoubtedly received their infection by contact with the patients who were ill in the organization. This could easily be done since the men were crowded together on the train or on shipboard.

There were about 1,800 men on board the steamer, which number was composed of Casual Companies 4, 10, 11 and 15, and Supply Company 112. Most of these organizations went on to France, and among the members of Casual Company 4, fifty-seven other cases developed, as is mentioned above.

All of these patients had been inoculated with either typhoid vaccine and paratyphoid vaccine or triple typhoid vaccine or both. Many of them had received

* From the Office of the Chief Surgeon, American Troops in England.
* Table 2, describing the salient clinical features of the forty cases of typhoid, is too large for publication in THE JOURNAL. It will be included in the authors' reprints.

1. Official Weekly Bulletin 20.

several doses in excess of the required number, and the men were inoculated at widely different posts and at different times. One patient says that he received but one dose; otherwise it would seem that the whole organization was thoroughly immunized.

CLINICAL FEATURES

Opportunity to make a clinical study of these cases was afforded one of us (C. B. H.) at Base Hospital 204, Hursley Park, Hants, through the kindness of Major J. B. Fattic, M.C., in command.

Prompt segregation of the patients was effected by screening their ward. Disinfection of excreta was accomplished by chemical means, all dishes, bed pans and urinals were scalded immediately after use, and no case of typhoid developed as a result of hospital infection. The diet was largely liquid. A plentiful supply of excellent milk and eggs was available, and was supplemented by broths, cocoa and soft foods, as much as possible, especially in the milder cases. Facilities for the preparation of articles of soft diet were limited, and consequently additions of this nature

TABLE 1.—CASES OF TYPHOID FEVER ACCORDING TO DATE OF ONSET*

June																
Cody	En Route to Camp Merritt						Camp Merritt								
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
+	×						×			+		+ + +	+	× ×	× × × +	× × +

July														
En Route to England									American Rest Camp, England					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
× ×	× × × +	× +	× + ×		× × × + + +	× +	+ ×	+	× +	+	+			

* In this table × indicates cases in which B. typhosus has been isolated, and + indicates cases which were clinically typhoid, but in which no B. typhosus has been isolated to date.

to the diet were not so extensive as might have been desired. However, the size of the intestinal ulcerations found at necropsy in the fatal cases was such as to cause extreme hesitation in the matter of more liberal feeding for the rest of the patients.

Table 2 has been prepared so that the salient features of this group of cases may be presented in as brief a form as possible. A short discussion and explanation of this table may aid in a clear understanding of the cases. Of the forty cases in the group, only two were clinically not typhoid. These are Cases 7 and 38.

1. Under the heading "Onset," the date and initial symptoms are shown. The establishment of the exact date was very difficult, and in many cases was determined by the clinical record during the course of illness at the hospital, verified as far as possible by a more or less indefinite statement of the patient. The striking feature shown under "Initial Symptoms," which are mentioned in the order of their occurrence, is the frequency of chill as the first abnormality noted by the patient. This occurred in approximately 16 per cent. of the cases, and was, by the patients' statements, a definite rigor. Diarrhea early in the onset occurred in approximately 58 per cent. of the cases, constipation in approximately 21 per cent., abdominal pain in approximately 6 per cent., and nosebleed in but one case, approximately 2.6 per cent.

2. The figures in the column "Duration on Admission" are based on the dates of onset, and are therefore not exact, but closely approximate the truth. The shortest duration of disease on admission was three days, the longest thirty-one days. From this column the average duration of disease on admission is determined as thirteen and one-half days.

3. Diarrhea was troublesome in but seven cases, constipation in six cases, abdominal distention in nine cases, and marked persistent abdominal distress in three cases.

4. Rose spots were observed in nineteen cases. Probable enlargement of the spleen as determined by percussion was noted in eighteen cases, and is designated by a single plus under the column marked "Spleen." Palpable spleen was made out in fifteen cases, and is shown in this column by a double plus. Tender toes, designated by a plus sign, were demonstrated in fifteen cases. In five cases this condition was so marked as to cause considerable discomfort.

5. The leukocyte counts are quite typical of typhoid. A count of 7,000 or less occurred in eighteen cases. The second count in Case 29 shows the leukocytosis of a complicating lobar pneumonia. The second and third counts in Case 33 show the leukocytosis of perforation and beginning peritonitis. The second count in Case 36 was considered as strong indication of perforation, occurring in coincidence with severe abdominal pain. However, there was not enough evidence to warrant operation, and we were later forced to conclude that the perforation, if any had occurred, had been sealed immediately by the omentum.

6. The results obtained by the atropin test are of extreme interest and worthy of a more extensive discussion than can be given in this report. In one column appears the day of disease on which the test was performed; in the next column is noted the pulse reaction. If an acceleration in pulse rate occurred, it is shown by a plus sign and a number representing the amount of increase due to the atropin over the normal rate immediately before the administration of atropin. Unfortunately, it was impossible to repeat tests in any of the cases because of lack of time. Two of the forty patients in this group, 34 and 37, died before the series of tests was started. Two of the remaining thirty-eight patients, 7 and 38, clinically not typhoid, showed accelerations of 24 and 34 beats, respectively, and should be considered negative reactions (acceleration of over 15 beats), leaving tests in thirty-six cases of clinical typhoid for consideration.

An acceleration of pulse rate occurred in thirty-three cases, a decrease of rate occurred in one, Case 33. No alteration in rate occurred in two, Cases 10 and 28. Twenty-three of the thirty-six cases showed a positive reaction (either a decrease, no alteration, or an increase of less than fifteen beats). The earliest day on which the test was performed in this group of twenty-three was the seventeenth day; the latest, the thirty-first day. The results in this group of thirty-six show a positive reaction in 63.8 per cent. of the cases. Of the eleven cases showing an acceleration of fifteen or more beats, the test was performed later than the thirtieth day of disease in seven cases, and in none was the test made earlier than the twenty-first day. It is only fair to the originators of this test to state that accuracy is not claimed for tests done later than the thirtieth day, and to point out the fact that if we eliminate the seven cases just mentioned, the percentage of positive results in the whole series of thirty-six cases would be 79.3 per cent.[2]

7. Typhoid bacilli were isolated from the blood in twelve cases, and from the stools in nine cases. In one, Case 34, the blood culture was positive as late as the twentieth day of the disease. In the column marked "Widals" are placed the results as determined by a series of tests made in each case.

8. The clinical course is briefly shown in the latter part of the chart. Average temperature and pulse rates, during the fastidium, are shown in their proper columns. The average

2. These tests were carried out according to the technic described by Capt. H. F. Marris, R. A. M. C. (Brit. M. J. **2**: 717, 1916) and Special Report Series, No. 9, Medical Research Committee, to which article and articles on the same subject by Alfred Friedlander and C. P. McCord (J. A. M. A. **70**: 1435 [May 18] 1918) and E. H. Mason (Arch. Int. Med. **21**: 1 [Jan.] 1918) the reader is referred for further information.

duration of fever in thirty-two cases in which the patients are now convalescent is over thirty-five days. The shortest, Case 32, is nineteen days, the longest, Case 40, is fifty-eight days. Of the fatal cases, Patient 11 died the thirty-third day of terminal pneumonia; Patient 30 died the thirty-ninth day of toxemia; Patient 33 died the thirty-eighth day of surgical shock, following operation for perforation; Patient 34 died the twenty-seventh day of toxemia; Patient 37 died the ninth day of toxemia. Out of the thirty-eight cases, twenty-seven were high grade typhoids, much more severe than should be expected in vaccinated men. This is undoubtedly due to the average lateness in the course on admission to the hospital. The remaining eleven cases were mild, low grade typhoids. Complications occurring in this series were: Lobar pneumonia, one, Case 29; terminal pneumonia, one, Case 30; bronchopneumonia, two, Cases 11 and 30; severe bronchitis, six, Cases 1, 3, 8, 12, 27 and 34; hemorrhage, three, Cases 10, 12 and 13; perforation, one, Case 33; phlebitis, one, Case 36; bed sore, two, Cases 5 and 10; one, Case 15, is still febrile in the fifty-first day of disease.

TABLE 3.—SUMMARY OF LABORATORY FINDINGS

	No. of Cases
B. typhosus isolated from blood and from stool	4
B. typhosus isolated from blood only	8
B. typhosus isolated from stool only	5
Typical typhoid lesions at necropsy in cases in which the bacillus was not isolated during life (B. typhosus isolated postmortem from two of the foregoing)	3
Typical shift in typhoid agglutinins; blood and stool cultures negative	6

LABORATORY FINDINGS

Of the forty patients in this series, admitted to Base Hospital 204 as typhoid suspects, the laboratory findings were positive in twenty-six. The results are summarized in Table 3.

BLOOD CULTURES

Blood cultures in sterile oxbile yielded positive results in about 30 per cent. of the cases. This is higher than would be expected when it is considered that most were cultivated in the third week or even later in the disease. Moreover, it can be seen at a glance at Table 4, in which the cases are arranged in order of the date of onset, that the positive blood cultures are not grouped at the end of the table, among

TABLE 4.—BLOOD AND STOOL CULTURES, AGGLUTINATION TESTS AND VACCINATION DATA

No.	Date of Onset	Identification Number	Blood Cultures		Stool Cultures			Agglutination					Vaccination			Place
			Day of Disease	Result	No. of Examinations	Number Positive	Day of Disease Positive	Day of Disease	Agglutinin Units* Typhoid	Para A	Para B	Interpretation	Months Previous to Admission	Vaccine†	Doses‡	
1	Before June 15	1416955	34+	0	8	0	..	34	36	38	50	Neg.	8	T	7	Columbus, Neb.
								43	27	18	31		8	P		and Camp Cody
2	June 15	1415881	32	0	12	0	..	32	2300	50	60	Typh.	8	TAB	3	Camp Dodge
								42	3600	25	60					
								60	1400	16	30					
3	June 19	1415949	29	0	9	0	..	29	18	25	6	Neg.	8	TAB	3	Camp Dodge
								41	18	25	31					
								62	18	80	12					
4	June 21	1412908	26	+	1	1	26	26	71	19	30	.....	10	T	3	Camp Dodge
5	June 24	1412297	24	0	8	0	..	24	710	25	62	Typh.	8	TAB	3	Camp Dodge
								34	360	18	31					
								57	140	16	12					
6	June 26	1415933	22	0	8	0	..	22	7	25	31	Typh. (?)	8	T	3	Camp Dodge
								33	36	25	62					
7	June 26	1415903	23	0	9	0	..	23	17	50	62	Para A or B?	8	T?	3	Camps Dodge and Cody
								32	17	25	62					
								53	36	16	12					
8	June 26	1416918	23	0	7	0	..	23	530	50	31	Typh.	6	T	8	Camps Funston and Cody
								32	1400	50	62					
								53	530	16	31					
9	June 28	1416649	19	+	8	1	40	19	36	5	30	Typh. (?)	8	TAB	3+	Camp Cody
								35	55	25	30					
								54	18	6	30					
10	June 28	1417300	20	0	2	0	..	20	36	50	250	Para B (?)	6	?	5	Fort Logan and Camp Cody
								31	36	50	120					
								39	71	620	62					
11	June 29	1416912	18	+	3	0	..	18	107	75	190	Typh.	6	TAB	5	Camps Funston and Cody
								29	107	75	93					
								39	366	120						
								53	140	41	121					
12	June 29	1416914	19	0	4	1	23	19	140	5	12	Neg.	8	TAB	3	Camps Funston and Cody
								29	140	5	12					
								52	140	8	12					
13	June 29	1415911	21	0	7	1	38	21	210	25	62	Para B	8	TAB	3	Camp Dodge
								33	360	50	31					
								39	140	31	6					
								52	360	16	12					
14	June 29	1417325	19	0	10	0	..	19	36	25	31	Neg.	8	TAB	5	Camps Funston and Cody
								31	71	10	31					
								52	36	16	12					
15	June 29	1411834	19	0	4	0	..	19	530	100	62	Neg.	8	TAB	1	Camp Dodge
								27	140	25	120					
								37	360	31	62					
								51	360	16	50					
16	June 30	1415920	17	+	4	1	29	17	250	25	22	Typh. (?)	8	TAB	3	Camp Dodge
								31	710	10	31					
17	June 30	1417306	17	+	8	0	..	17	70	25	22	Typh. (?)	8	TAB	6	Grand Island and Camp Cody
								29	107	25	12					
								51	27	86	12					
18	July 1	1412428	17	+	10	0	..	17	2100	60	31	Typh.	8	?	3	Camp Dodge
								32	36	25	31					
								37	36	31	12					
								50	70	16	12					
19	July 2	1416900	16	0	6	0	..	16	71	50	31	Neg. (?)	11	T	6	Lincoln and Camp Cody
								25	18	10	12		9	P		
								49	110	41	12					
20	July 2	1415892	18	+	2	0	..	18	17	10	31	Neg. (?)	8	T	3	Camp Dodge
								26	17	25	31					
								35	71	120	31					
								49	71	31	31					
21	July 2	1417319	15	+	3	1	45	15	1400	10	50	Typh.	8	TAB	4	Camps Funston and Cody
								32	500	25	60					
								49	140	16	31					
22	July 2	1417330	15	0	9	3	34	15	70	25	19	Neg.	12	—	3	Nebraska City
							35	26	70	50	31		10	—	6	and Camp Cody
							36	49	140	16	6					

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TABLE 4.—BLOOD AND STOOL CULTURES, AGGLUTINATION TESTS AND VACCINATION DATA—Continued

No.	Date of Onset	Identification Number	Blood Cultures		Stool Cultures			Agglutination						Vaccination			Place
			Day of Disease	Result	No. of Examinations	Number Positive	Day of Disease Positive	Day of Disease	Agglutinin Units* Typhoid	Para A	Para B	Interpretation	Months Previous to Admission	Vaccine†	Doses‡	
23	July 3	1416894	16	0	6	0	..	16	360	0	6	Typh.	8	TAB	6	Camp Cody
								25	210	0	0					
								48	27	0	0					
24	July 3	1417290	14	+	6	0	..	14	7	25	12	Neg.	8	TAB	8	Nebraska City and Camp Cody
								25	36	100	60					
								48	36	160	60					
25	July 4	1417065	15	0	3	0	..	15	710	50	62	Typh.	8	TAB	3	Camp Cody
								25	4300	50	120					
								47	530	16	12					
26	July 4	1415891	17	0	4	0	..	19	210	25	120	Neg.	8	TAB	3	Camp Dodge
								24	140	50	62					
27	July 4	1416988	16	0	7	1	31	16	140	50	90	Neg. (?)	8	TAB	4	Camps Funston and Cody
								24	71	50	62					
								47	140	41	31					
28	July 6	1415994	14	+	4	0	..	14	3	50	31	Typh.	8	TAB	3	Camp Cody
								26	210	50	6					
								44	71	16	12					
29	July 6	1416946	12	0	7	0	..	12	36	100	120	Typh.	6	TAB	8	Camps Funston and Cody
								22	71	50	50					
								44	17	41	31					
30	July 6	1417287	12	0	2	0	..	12	17	25	62	Para A (?)	8	TAB	4	Camp Cody
								23	17	100	62					
								44	11	41	12					
31	July 6	1417056	..	..	..	..	..	..	.....	..	..	.....	..	?		
32	July 6	1415940	11	+	8	0	..	11	1000	50	50	Typh.	8	TAB	3	Camp Cody
								16	1400	100	60					
								21	710	120	31					
								35	210	63	120					
33	July 6	1416947	13	0	4	0	..	13	140	5	62	Para B (?)	11	T	9	Tecumseh and Camp Cody
								23	210	10	62		8	P		
								41	140	16	12					
34	July 6	1415915	11	0	6	0	..	11	27	18	30	Para B (?)	9	TAB	3	?
								23	71	25	120					
								44	36	16	12					
35	July 7	1415899	13	+	10	0	..	13	21	50	62	Typh.	6	TAB	3+	Camps Dodge and Cody
								26	36	50	62					
								31	140	37	37					
								44	36	16	37					
36	July 7	1626057	10	0	10	0	..	10	36	25	5	Typh. (?)	10	T	6	Fort Logan
			20	0				20	27	18	5					
								31	36	12	4					
								44	140	16	3					
37	July 8	1417296	12	0	5	0	..	12	36	50	62	Neg.	8	TAB	6	Camps Funston and Cody
								20	17	50	62					
								42	12	8	12					
38	July 9	1417317	10	0	5	0	..	10	36	..	62	Para B (?)	6	TAB	3+	Camps Funston and Cody
								18	71	100	250					
								40	140	25	120					
39	July 11	1411828	8	0	1	0	..	8	17	25	250	Neg.	8	TAB	12	Camps Dodge and Cody
								17	17	25	250					
								39	27	16	62					
40	July 12	1416664	7	0	6	1	15	77	56	50	62	Neg.	9	TAB	6(?)	Camp Cody
								19	36	50	12					
								24	27	31	6					

* Units are determined by dividing the denominator of the fraction which expresses the highest dilution in which agglutination occurs by the correction factor. In this case the factor for typhoid suspension used was 7; for paratyphoid B, 4, and for paratyphoid A, 5, 4 or 3, according to the suspension used.

† In this column, T indicates typhoid vaccine; P, paratyphoid vaccine; TAB, triple vaccine; ? indicates vaccination not entered on service record.

‡ The place of vaccination and number of doses administered are taken from patients' statements, and the figures given are only approximate.

the cases tested early in their course, but are scattered through the list without obvious relationship to the stage of the disease at which they were made. A point that may explain these late positive cultures was very striking when the cultures were made. Blood was taken from ten of the patients the evening they were admitted to the hospital. Of these ten, eight were positive. Of twenty-nine cultures taken after the patients had been in bed twenty-four hours or longer, only four were positive. This at once suggests the possibility that the physical strain these febrile men had undergone was responsible for their persistent bacteremia.

Stool Cultures.[3]—The small number of positive stool cultures obtained was also surprising. The specimens were plated both on Endo and on Krumwiede's brilliant green, and the greatest care was used in studying the colonies. Nevertheless, only about 23 per cent. were positive even on repeated examination.

Agglutinin Reactions.[3]—The serum agglutinins of these patients were studied by the method of Dreyer.[4] In this we were greatly assisted by Dr. A. D. Gardner, of the Standards Laboratories, Oxford, who supplied us with standardized suspensions. The results, which are summarized in Table 4, are interesting from several points of view.

From the diagnostic standpoint these reactions gave us evidence of typhoid infection in a number of cases, typical clinically, in which all cultures were negative. This includes one case (25, Table 4) which was febrile during the patient's stay in the hospital and in which there were no signs or symptoms suggesting typhoid, although the patient gave an indefinite history of illness while at sea. On the other hand, in some cases in which the tests were made at too long intervals there were variations in the agglutinins for paratyphoid A and B, which might have been interpreted as evidence of infection with one of the organisms, although on epidemiologic evidence such a diagnosis can almost be excluded. The result, however, shows the necessity of caution in interpreting results of agglutinin titrations, especially when observations at intervals of a few days during the third and fourth weeks are not made.

3. The majority of the stool examinations were made by Dr. T. L. Harkey, and the aglutinin titrations by Miss M. Vaughan.

4. Dreyer: J. Path. & Bacteriol. **13**: 332, 1909.

POSTMORTEM FINDINGS

Necropsies were performed in the five fatal cases in the series. All showed typical typhoid ulceration of the lower ileum. A very striking feature was the enormous enlargement of the spleen in the first two cases, in one of which the patient died early in the disease (twelfth day). In both these cases the spleen weighed over 500 gm., was very firm, and the pulp on section rather dry; the spleen wholly unlike the typical soft spleen of typhoid.

In the first case, in which the patient died on the twelfth day, the Peyer's patches were in the stage of medullary swelling. In the second case (thirty-second day) there were large, deep ulcerations with hemorrhage into the bowel. In the third case (thirty-seventh day) also there were deep ulcers, one of which had perforated and caused a local peritonitis. The two remaining patients, who died on the thirty-fourth and thirty-sixth days, showed ulcers in the stage of repair. One died of bilateral lobar pneumonia, with empyema, due to Pneumococcus Type I. In the fifth case new lymph follicles had become involved and were in the stage of medullary swelling — evidently a recrudescence. The fifth patient had an intramuscular hematoma of the rectus abdominalis. The first and fourth cases showed thrombosis and infarction of the lung. In the fourth, the infarct was surrounded by a large area of lobar pneumonia. No other complicating lesions were observed.

In the first two cases, typhoid bacilli were isolated from the spleen. Cultures from the third case were heavily overgrown with colon bacilli, and *B. typhosus* was not recovered. In the fourth and fifth cases, cultures from the spleen were negative, but the typhoid bacillus was found in the gallbladder.

COMMENT

The most interesting question that arises in regard to these cases is: Why did this large group of vaccinated men become infected? To this, three possible answers present themselves: First, that the vaccination was defective; second, that the infection was due to the abnormal race of *B. typhosus* against which the vaccine did not protect; third, that the men received an overwhelming dose of the infecting organism.

The first hypothesis seems improbable from the fact that the men were vaccinated at different camps and at different times, so that it is hardly possible that all received the same batch of vaccine. Additional evidence on this point is seen in the record of their agglutinins for paratyphoid A and B (Table 4). When first examined, the majority had from 25 to 100 agglutinin units for these organisms in their serums. This means agglutination in dilutions from 1:100 to 1:500. It is no lower than frequently found in healthy soldiers from eight to twelve months after vaccination, and shows that the vaccine was good and that the men reacted to it. It is true that a few men in the series had a very small amount of agglutinin or none at all for these organisms, even when their records stated that they had received triple vaccine; but this fact could not explain the majority of the infections.

It might be suggested that the paratyphoid agglutinins that were observed in these cases were group agglutinins, due to the typhoid infection and not to the paratyphoid vaccination. It has been the experience of Dreyer and his co-workers that group agglutinins of this sort are not encountered.[5] Moreover, it was readily shown in cases that were tested by absorption that the three agglutinins were distinct. The possibility that these infections were due to defective vaccine can, then, practically be excluded.

As to the second hypothesis, that the infections were due to an abnormal strain of typhoid, we have no positive evidence. All the strains isolated gave characteristic fermentation results on glucose, lactose, mannite and saccharose; and all with one exception agglutinated in typhoid immune serum in about the same dilution as the homologous strain. One strain isolated from the blood (24, Table 4) has remained inagglutinable so far, although its cultural reactions are typical.

It has been shown by Weiss[6] that minor differences both antigenic and cultural can be brought out between certain races of *B. typhosus*. We propose to investigate these strains further in this respect.

In the absence of evidence that the prophylactic immunization of these men differed in any way from that which has, in the vast majority of cases, given adequate protection, or that the strain of typhoid with which they were infected was atypical, there remains the hypothesis that they received an excessive dose of typhoid bacilli.

CONCLUSIONS

1. Owing to the lateness in the course on admission to hospital, cultural confirmation of clinical diagnosis was impossible in a considerable number of cases. The fact that all of these men had received routine immunizing vaccine during the past eleven months made the ordinary Widal reaction unreliable. Careful clinical study, however, justifies a positive diagnosis in thirty-eight of the cases.

2. That severe typhoid may occur in vaccinated men is proved by this series of cases.

3. The occurrence of uniformly low white blood counts in this series again illustrates the diagnostic value of routine blood examination in all febrile conditions.

4. It is felt that the atropin test may be of great value in the diagnosis of typhoid fever, although the smallness of this series, the impossibility of laboratory confirmation of diagnosis, and the lack of control cases makes authoritative conclusions in this matter impossible.

5. It is hoped that the explanation of the lamentably high mortality rate (13.15 per cent.) may be found in the average lateness in the course of disease on admission to the hospital.

5. Walker, E. W. A.: Lancet **2**: 896 (Nov. 25) 1916.
6. Weiss, H.: J. M. Res. **35**: 403 (Jan.) 1917.

Checking the Senses.—Bear in mind that each of you, the field commander of your own life's warfare, lives in a dugout. You are helpless except for your lines of communication, your senses. Guard them as a most precious possession. Train them to do their work well; watch them; suspect them. Send your eyes to spy on your ears. Bring up smell to reinforce vision. Suspect the message and send the messenger back again to examine, and again to reexamine, until you are sure the news is true; sure that the valvular sound is such and no other; sure that the reflex is absent; sure that the urine contains albumin; sure beyond a doubt of the thousand items of sense information that come to your headquarters and are needed in your business—the warfare on disease.—E. P. Lyon, *Texas State Journal of Medicine*.

THE EARLY DIAGNOSIS OF GAS GANGRENE

FREDERICK CHRISTOPHER, M.D. (CHICAGO)
First Lieutenant, M. C., U. S. Army
FRANCE

The literature on the subject of gas gangrene is already so voluminous and so comprehensive that any one attempting to contribute further to it must have a very good reason for doing so. With our present methods of treatment, however, the early clinical recognition of this condition is of such outstanding importance to the good of the wounded men that it has seemed that undue emphasis cannot be placed on it.

Conditions of war surgery are such that the men who operate on the patients are seldom able to make the dressings. The first dressings are often made in different hospitals from those in which the patient was operated on. When the patient is first brought up for operation, gas gangrene may already be present, or it may develop after the operation. In the latter case, the responsibility for the early recognition of gas bacillus infection rests practically entirely on the shoulders of the men who make the dressings.

Examination of the statistics of the causes of death of patients in American Paris hospitals during a recent drive afforded very convincing evidence of the menace of gas gangrene. In the protocols of 100 consecutive necropsies performed by Major H. E. Robertson, M. R. C., I noted that in 33 per cent. of the cases the probable cause of death was the injury plus gas gangrene, and in 8 per cent., the injury plus gas gangrene plus other causes, as pleuritis or hemorrhage. In a large group of these cases, the diagnosis was made too late to be of any service to the surgeon.

Many writers have described various forms of gas gangrene. Weinberg and Seguin[1] distinguish (*a*) the classical or emphysematous form; (*b*) the toxic, or edematous, form; (*c*) the mixed form, and (*d*) the putrid varieties. They have cultivated numerous organisms from gas gangrene cases, but believe that the leading rôles are played by (*a*) *B. perfringens* (*B. aerogenes-capsulatus* of Welch); (*b*) *B. oedematiens*, and (*c*) *vibrion septique*. As one or another of these micro-organisms predominates, correspondingly, certain sets of symptoms seem to be more evident. From the standpoint of the clinician, who is eager to learn the best means of arriving at an early diagnosis, it seems safest to consider gas gangrene as a clinical entity of multiple etiology and one in which the most striking sign or symptom is not always the same in all cases.

Taylor[2] has classified the various stages in the course of gas gangrene as: (1) dormant stage; (2) stage of acute gaseous distention; (3) explosive stage; (4) stage of systemic intoxication, and (5) stage of septicemia. It is in accordance with my purpose in this paper to omit all discussion of the first, third, fourth and fifth of these stages, and the etiology, bacteriology, pathology and treatment as well, and to confine the study to the consideration of the best methods of recognizing the stage of acute gaseous distention, particularly in postoperative wounds. If the infection is recognized in this second stage, it is generally possible to forestall its progress to later stages by prompt and adequate surgical treatment. If the disease has reached the third or succeeding stages without operation, the diagnosis offers little difficulty.

1. Weinberg and Seguin: La gangrène gaseuse, Paris, Masson & Cie, 1918.
2. Taylor, K.: J. Path. & Bacteriol. **20**: 384, 1916.

FACTORS TO BE CONSIDERED IN ARRIVING AT AN EARLY DIAGNOSIS

1. *The Patient's Chief Complaint.*—The patient may have no complaint. Pain in the region of the wound, however, is a very common complaint and one that should always command attention. Taylor believes that pain of short duration followed by numbness is characteristic. The Chaliers[3] refer to the frequency with which patients ask to have their bandages loosened. Pain in the limb distal to the wound has been mentioned.[4]

2. *History.*—The length of time after the receipt of the injury is of first importance. All wounds are to be suspected and watched for a period of from six to eight days. Wounds are not immune from gas bacillus infection after that time, as is shown by the interesting case of Penhallow[5] in which, though the wound had healed and the operation was performed two months after the injury, it stirred up a latent gas infection. The patient may know whether the missile which struck him was a machine gun bullet or a fragment of shell. A history of previous operation or operations may be elicited, and if these have been performed, the time interval between the injury and the first operation should be learned.

3. *The General Condition of the Patient.*—Generally the euphoria and maintenance of intelligence is very striking, which is in accord with the observations of Chalier and Chalier.[3] We cannot agree with one author[4] that drowsiness is a marked symptom. Albrecht[6] notes restlessness.

The temperature is not characteristic, though it may be elevated. Speed[7] considers the lack of high fever of importance. Col. Joseph A. Blake calls attention to the frequency with which low temperatures are found.

The pulse is very important, for it is almost invariably increased in frequency. It is of great help to the surgeon to have the pulse rate curve placed on the bedside chart along with the temperature curve. A high elevation of the pulse rate without corresponding increase in the temperature should attract the surgeon's attention. Colonel Blake considers the crossing of the pulse and temperature curves very characteristic.

The respirations are generally more rapid, though "dyspnea has a greater prognostic significance than diagnostic value."[8]

The tongue is commonly dry. Vomiting has been observed,[8] but is uncommon.

4. *Inspection.*—The type of wound is of first importance. Gas gangrene is essentially a disease of traumatized muscle (Taylor) and consequently is most frequently found when the wounds are in the large muscle masses. The thigh, the shoulder muscles and the calf are frequent sites of election. Wounds made by shell fragments with the foreign body still buried in the

3. Chalier, A., and Chalier, J.: La gangrène gaseuse, Paris, Librairie Felix Alcan.
4. Zindel, L.: Bruns' Kriegschr. **31**: 257; abstr., Brit. M. J. **2**: 466 (April 7) 1917.
5. Penhallow, D. P.: Lancet **1**: 866 (April 22) 1916.
6. Albrecht: Wien. klin. Wchnschr. **30**: 950, 1917.
7. Speed, Kellogg: Localized Gas Infections in War Wounds Treated by Muscle Group Excision, J. A. M. A. **70**: 225 (Jan. 26) 1918.
8. Emrys-Roberts, E., and Cowell, E. M.: J. Path. & Bacteriol. **21**: 473 (October) 1917.

tissue are almost certain to be infected with one or more of the causative agents of gas gangrene. Even apparently clean, through-and-through machine gun bullet injuries with sealed wounds of exit and entrance may develop gas gangrene. While gutter wounds are perhaps among the safest, if there is obvious dead muscle tissue present, they too are to be suspected. Wounds that have undergone no surgical treatment are very liable to develop gas gangrene, owing to the presence, along the missile tract, of masses of traumatized and necrotic muscle, which is very favorable to the growth of the gas bacillus and other etiologic agents. Wounds that are widely opened and debrided are unfavorable to the growth of anaerobes, to which class most of the organisms of gas gangrene belong. Poor gas drainage is responsible for the spread of the gas in the muscle bundles, and in consequence is in a large measure responsible for the spread of the infection itself.[9] As gas drainage is generally very adequate in open wounds, there is less chance of the extension of the infection in these cases. If the débris of the wound has already been removed, the extent of the operation must be judged to be ample or insufficient. "Wounds involving main blood vessels, for example, the popliteal artery, are notorious for the frequency with which gas gangrene develops in the distal segment of the limb."[10] In these cases the organisms of gas gangrene find an excellent medium for their growth in the muscles whose vitality has been diminished by the depletion of the blood supply.

The site of the suspected gas gangrene must be examined to see if it has been subjected to continuous pressure, as with the buttocks and back in many cases, for it is known that metastatic gas gangrene may develop in parts of the body widely distant from the wound, if these parts have an impaired circulation from pressure owing to failure to change the patient's position in bed from time to time.[11]

The most important single sign seems to be the swelling. It is invariably present. Any swelling about a recent battle or operative (war) wound should be considered to be due to gas gangrene unless it is proved to be otherwise. The swelling is often fusiform in shape on account of the fact that in the early stages the gas confines itself to the muscle bundles along which it travels longitudinally. It may affect an entire limb or it may be limited to one border of a wound. When there is a large open wound with good opportunity for gas drainage the tension will be less and the swelling smaller or perhaps purely local in character. Taylor has photographs of a case in which the gas has lifted up the fascia lata tensor to the level of the patella on the anterior surface of the thigh. It is only the smaller swellings that interest us in the early diagnosis; when the swelling is very large, the diagnosis has by that time generally been well established.

The color changes in the skin have been very carefully described by Col. Cuthbert Wallace.[12] He notes that at first the skin is paler than normal, owing to the blood's having been driven out of it by pressure. Then "a dirty cream tint gradually appears and may be taken as a sure sign that gangrene is established." Next, irregular purple areas which enlarge and coalesce appear. By this time blebs have formed, and the dermis under them is a shining purple-red. Finally, a yellowish green tint is seen. In some cases the whole body may have an icteric tinge. Emrys-Roberts and Cowell[8] find that "the sclerotics become distinctly icteric." In mixed infections the skin may be red, as in ordinary pyogenic infections. The erysipèle bronzé is occasionally seen.[13]

The increased visibility of the superficial veins has frequently been noticed in the neighborhood of gangrene.

In case a portion of muscle is exposed in the wound so that its color may be observed, the successive changes as the gangrene progresses are brick red, green and finally black.[12]

Taylor has called attention to the bulging of the muscles from the wound that is sometimes found with gas gangrene.

The discharge may be said to be characterized by an absence of suppuration. If the discharge is increased, thin, and pale brown,[14] gas infection is to be suspected. Sacquépée[13] finds that the discharge varies from red-brown to violet.

Blebs on the skin occur so late in the course of the infection as to be unimportant in the making of an early diagnosis.

5. *Odor.*—The odor from a wound infected with gas gangrene is generally considered to be very characteristic, and various attempts have been made to describe it. Speed says that it is "fetid and extremely penetrating, resembling that from the thin stool of an infant suffering from extreme enteritis and acidosis." The Chaliers,[3] however, consider the odor mouselike and say that it is neither putrid nor fecal. Taylor says that the odor of butyric acid may be recognized in the odor of gas gangrene.

6. *Palpation.*—Crepitus has long been identified with gas gangrene. When a limb whose tissues have been infiltrated with gas is gently palpated, a very definite fine crepitus may be elicited. This is an important sign, but it is far from an infallible one. It is due to the passage of gas bubbles through the foramina in the muscle sheaths. Kenneth Taylor and also Wallace[15] contend that the muscles become resonant from the presence of gas long before they become crepitant to the finger. Wallace says that crepitation does not necessarily mean microbic infection and is a late phenomenon; and moreover, that it is not always present with gas. The sensation of crepitation may also occur in fractures, following incorrect injection of serum; in the mechanical emphysema occurring sometimes in wounds of the limbs near flexion folds; in laryngotracheal wounds; in chest wounds; in subcutaneous emphysema in intestinal wounds; in wounds of the rectum with emphysema of the thigh; in hematoma with gas; in plegmon gaseuse;[3] and Tuffier[16] mentions certain gangrene in vascular lesions which is able momentarily to contain gas.

On palpation, the swelling frequently has an elastic, tense consistency which readily may be distinguished from the fluctuation of an abscess or the pitting of edema.

Induration is not uncommon, and is particularly to be found in those cases in which gas gangrene develops on the border of an open wound. It is probably more frequently found in cases in which the gas infection

9. Taylor, Kenneth: Lancet **1**: 123 (Jan. 15) 1916.
10. McNee, J. W., and Dunn, J. S.: Brit. M. J. **1**: 727 (June 2) 1917.
11. Taylor, Kenneth: Ann. Surg. **64**: 641 (Dec.) 1916.
12. Wallace, Cuthbert: Brit. M. J. **1**: 705 (June 2) 1917.
13. Sacquépée, E.: Presse méd. **26**: 197 (April 18) 1918.
14. Albrecht: Wien. klin. Wchnschr., **30**: 950, 1917.
15. Wallace, Cuthbert: J. R. A. M. C. (May) 1917.
16. Tuffier: Bull. et nérv. Soc. de chir. (Nov. 3) 1914.

is complicated by the presence of pyogenic organisms.

Tenderness on palpation is generally present, but there is not the exquisite pain found in inflammations of a pyogenic nature, except, perhaps, in cases of mixed infections.

By pressure with the flat of the hand toward the wound edges, frequently small gas bubbles may be milked into the wound. When present, this is practically a sure sign of gas infection; but the process is generally fairly well advanced by the time it is demonstrable. Moreover, care must be taken not to mistake air, which may normally be present in the deep recesses of the wound and which may similarly be pressed out, for gas bubbles.

Edema may be present to a certain extent in some forms of the infection. According to many authors, it is due, when present, to *B. oedematiens* of Weinberg and Sequin. It may be present also in cases in which the pressure of the gas has caused venous obstruction.

The muscle, if present in the wound, may be tested for contractility by pinching with a forceps or for bleeding by scraping. If either of these signs is absent, it is tolerably safe to assume that the muscle is dead. Dead muscle, if gas infection is not already present in it, eagerly invites its development.

7. *Percussion.*—On percussion, a limb distended by gas infection gives a tympanitic note. This test is believed to be of considerable value in the early diagnosis.

8. *Auscultation.*—An early method of demonstrating crepitus is to press the bell of the stethescope on the affected limb; a crackling may be heard in this manner, before it can be palpated.

9. *Roentgenoscopy.*—Roentgenologic examination is a helpful means of arriving at an early diagnosis. Morgan and Vilvandre[17] have demonstrated the presence of gas entirely unsuspected until revealed by the rays during routine examinations for pieces of metal or fractures. The roentgenographic appearance of the gas is usually that of: (*a*) bubbles in strings; (*b*) broad cast; (*c*) in a layer under the skin; (*d*) with a cloudlike outline to the shadows, or (*e*) as a striation.[18] The bubbles need not be circular, but may fit the shape of the cavity they are in. Agnes Savill[18] is even so sanguine as to the power of the roentgen ray that she believes she can determine by it the variety of gas infection in some cases. Among the causes of failure that one must beware of in making a diagnosis of gas gangrene from the roentgenogram are: ecchymosis; syringing the wound with hydrogen peroxid; (25) shadows made by wounds; surgical emphysema; normal structures (popliteal space, bursae), and hematomas.

10. *Cultures.*—Culture of the wound is not of great value. Though the gas bacillus may generally be identified within eight hours by its growth on milk, the gangrene may spread rapidly within that time. A negative culture is of no value, and a positive culture is not infrequently found in wounds that are wide open and will never require further surgical intervention.

11. *Aspiration of Gas.*—Diagnostic aspiration of gas from muscle is occasionally of value in making a diagnosis.[2]

12. *Smears.*—Microscopic examination of smears made from the wound is of no value when negative and of but slight value when positive, for even then surgical therapy may not be indicated.

13. *Reaction.*—The reaction of the wound has been tested as an aid to diagnosis, for Sir Almroth Wright[19] showed that the organisms of gas infection tend to make acid the medium in which they grow; but little stress is to be placed on this test clinically.

17. Morgan, J. D., and Vilvandre, G.: Brit. M. J. **1**: 8 (Jan. 6) 1917.
18. Morgan and Vilvandre (Note 17). Savill, Agnes: Arch. Rad. & Elec. **21**: 201 (Dec.) 1916.

REPORT OF CASES

The cases reported are of interest because of the problems of diagnosis that they offered.

CASE 1.—Private C. C. C., aged 28, wounded, July 29, 1918, admitted to American Red Cross Military Hospital No. 2, July 30, had a gunshot wound, received in battle, in the middle of the right thigh, posteriorly. Gas infection was present. Roentgenoscopy revealed a foreign body measuring 30 by 40 mm. in the right buttock. July 30, the wound débris and the shell fragment were removed. Carrel-Dakin treatment was instituted. The condition of the wound seemed satisfactory until August 4 (six days after admission), when a small, indurated, red area on the upper border of the wound was noticed. The temperature was 103 F. and the pulse 70. No diagnosis of gas gangrene was made. August 7, the wound was examined and dressed under an anesthetic in the operating room, but the surgeon decided that no operation was necessary. August 9, gas bubbles could be pressed out of the wound. The temperature was 103.4 and the pulse 98. The patient was taken to the operating room and a very wide débridement was done. The patient recovered from the shock of operation only to go into a toxic state, and he died the following morning. This case is of interest for the fact that though the patient was carefully watched by several observers, the diagnosis of gas gangrene was not made until it was too late to save the man's life.

CASE 2.—Private C. W., aged 22, wounded, Aug. 4, 1918, admitted to American Red Cross Military Hospital No. 2, August 8, had received a through-and-through gunshot wound of the left thigh and left foot. The wounds were probably due to machine gun bullets. There was a marked hematoma of the left thigh. Roentgenoscopy was negative for a foreign body and the patient was sent to the ward for observation. August 11 (three days after admission and six days after the injury), the patient complained of pain in the thigh. The temperature was 100.4 and the pulse 120. Roentgenoscopy showed that the muscles of the thigh were spread apart and that there were light spaces in between them. It seemed probable that there was a gas bacillus infection. There was, however, a large hematoma. Numerous Carrel tubes were placed. The temperature gradually came down to normal after a week, and recovery seems assured today (Aug. 21, 1918). This case is of interest because the hematoma produced the roentgenographic appearance of gas in the muscle, and because, though diagnosis was not assured, decision to operate was made. There can be no regrets on failure to find gas in a suspected case, and the surgeon's course here seems to be entirely justified.

CONCLUSIONS

1. There is no single early pathognomonic clinical sign or symptom of gas gangrene. The condition is a syndrome, and the diagnosis generally depends on the combined presence of several signs or symptoms.

2. For an early diagnosis of gas gangrene, the more reliable factors are: history of a recent wound; swelling; increased frequency of pulse rate; tympany; crepitus (auscultatory and palpatory); pale color of skin; odor; ability to milk gas bubbles out of wound; thin discharge; roentgenographic findings, and maintained intelligence of the patient.

3. It is to be recommended that all swellings about wounds be considered as due to gas gangrene until proved to be otherwise. In cases of doubt, the wounds

19. Wright, A. E.: Lancet **1**: 1 (Jan. 6) 1917.

must be reinspected at intervals of not greater than two or three hours, or even subjected to surgical exploration. The responsibility of the early recognition of gas bacillus infection rests practically entirely on the shoulders of the men who dress the wounds. All roentgen-ray men who do not already do so should look for evidences of gas infection in every examination of war injuries made within ten days after the receipt of the wound.

RECONSTRUCTIVE SURGERY

THE PROBLEM OF RECORDS *

J. APPLETON NUTTER, M.D.
Assistant Orthopedic Surgeon, Clinic for Functional Reeducation
NEW YORK

In the treatment of diseases and disabilities of the joints there has always existed the difficulty of making suitable records. The difficulty has been one not only of accuracy, but also, to a much greater extent, of clearness and intelligibility. Where one surgeon, referring to movement at the shoulder joint, speaks of abduction of the arm, another speaks of elevation of the arm, and a third of side raising.

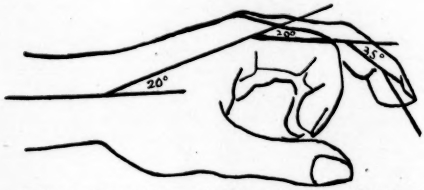

Fig. 1.—A stiff middle finger of the left hand that cannot be flexed voluntarily more than is shown. How can we record rapidly, accurately and intelligibly its position of deformity as well as range of motion? This is absolutely necessary so that improvement or its absence can be noted. The first step is to be able to record every possible position of the finger, as in this way we can note how far it flexes voluntarily, and how much more flexion can be gained by force: the same two points to be noted as regards its power of extension.

In the case of a stiff knee, almost hopeless confusion may exist in its actual description. One surgeon in his case report will speak of a straight leg as being fully extended, while a confrère will likely refer to it as showing 180 degrees extension.

These difficulties reached a climax when in Canada the board of pension commissioners at Ottawa was inundated with thousands of reports on joint disability and deformity, made by thousands of different army surgeons. Their descriptions depended almost wholly on words for accuracy, and were seldom aided by diagrams. Though they were correspondingly difficult to interpret, nevertheless on the accuracy of their interpretation by the pension commissioner depended the fairness of the pension adjustment. The government in self defense thereupon caused to be printed a series of charts showing the extremities, with the range of motion marked in degrees, and required these to be filled in by the examining surgeons. These charts worked well as far as the larger joints (knee and elbow) were concerned, but in the case of the hand they were not so successful.

In Hart House, Toronto, where some of the most advanced work in physiotherapy has been done on this side of the water, the relative position of one bone to another at a joint, as well as joint movement itself, is very accurately recorded on charts, one of which is reproduced in the accompanying table. These charts are arranged to accommodate practically every joint in the body, and show not only degrees of motion, active or passive, but also the strength of movement. These charts, needless to say, were meant to be used in conjunction with Prof. E. A. Bott's splendid

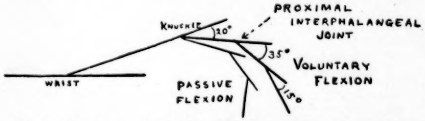

Fig. 2.—Flexion record of left middle finger, same case as recorded on Hart House chart. We are marking these angles in degrees for the sake of clearness. It will be noted that the lines represent the axes of the phalanges and metacarpal bones. No account is taken of the carpal movements, but only of the wrist as a whole.

series of mechanotherapy apparatus. Each machine has a dial by which its motion (active and passive) can be measured accurately in degrees. By using the Bott machines and recording the results on the charts provided for the purpose, the workers in the mechanotherapy room at Hart House were able to furnish themselves with a splendidly accurate record of joint deformity and motion which marked a great step forward in the scientific treatment of the surgery of the extremities.

Strength of motion at the various joints was estimated and recorded in percentages, the sound side being reckoned as 100 per cent. strong. No attempt was made in estimating strength to use a dynanometer or to calculate foot pounds, as it has been found that such methods were too elaborate for a busy clinic. The workers were trained to estimate the strength of a certain movement as compared with that of the corresponding movement on the opposite side.

When the Clinic for Functional Reeducation was opened in July, 1918, it had already had the benefit of a visit from Professor Bott, whose collaboration was greatly appreciated. The measures in use at Hart House at that time showed the high water mark of scientific efficiency and accuracy, and an opportunity was taken by several of those connected with the clinic to study them during a stay in Toronto.

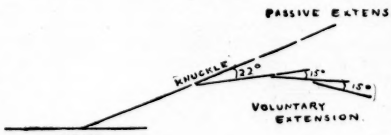

Fig. 3.—Extension of left middle finger.

The mechanotherapy room at the Clinic for Functional Reeducation is equipped with apparatus from two main sources, and to Major Tait McKenzie, R. A. M. C., professor of physiotherapy at the University of Pennsylvania, we are chiefly indebted for encouragement and assistance. As the work grew in volume it was noted that, especially in hand and finger cases, accurate tabulation of deformity and motion on the charts meant a somewhat tedious undertaking. The results also, while undeniably accurate,

* From the Clinic for Functional Reeducation.

were also rather unintelligible. In an effort to remedy the multiplicity of findings, recourse was had to diagrammatic drawings representing the hand and fingers. These drawings were made free hand, and in them a single line or succession of lines represented forearm, wrist, and each of the three phalanges. They were used in conjunction with the Hart House charts and

HART HOUSE CHART

Middle Finger (Left)	Movement—Active	Movement—Passive
Prox. flex.	20°	35°
Ext.	Lacks 5° of full	Full
Med. flex.	40°	45°
Ext.	Lacks 20° of full	Full
Dist. flex.	20°	45°
Ext.	Lacks 30° of full	Full

This is quite an accurate record of the finger, but takes a very long time to estimate and put down, and equally long to get a connected idea from reading it.

had the advantage that they showed at a glance the position of the various joints of wrist and fingers. No attempt was made to record strength of movement graphically, but active and passive motion, whether in flexion or extension, was shown on the diagram.

We have so far found the graphic method of such benefit to us in our hand cases that its use is now gradually extending to the larger joints.

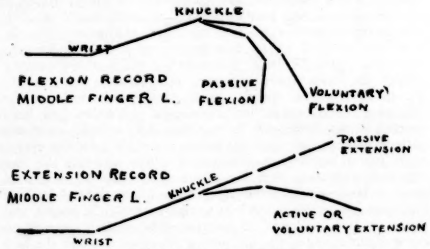

Fig. 4.—Graphic records, simplified and as in actual use. These take very little time to sketch free hand. If actual measurement in degrees of a joint is wanted, the sketch is used and the angles are measured

A few illustrations are appended of the graphic methods as used at the Clinic for Functional Reeducation in the hope that reconstructive surgery in general and the work of the War Risk Insurance Bureau in particular may be lightened.

5 Livingston Place, Stuyvesant Square.

Platinum.—In an article on platinum in *Commerce Reports* it is said that previous to the war 90 per cent. of the world's output of platinum was produced in Russia. The Russian field and the newer and less developed field in Colombia, South America, constitute the world's two important sources of this valuable metal. Notwithstanding the great demand for the metal in carrying on important processes during the war, the production in Russia fell off from about 300,000 ounces in 1911, to about 78,000 ounces in 1916. To counteract this in part, production in the Choco district of Colombia increased from 12,000 ounces in 1911 to about 50,000 troy ounces in 1917, an increase of 300 per cent. in this practically new field. In addition to the usual employment of platinum in electrical apparatus, crucibles, etc., the requirements were greatly increased during the war on account of the greatly enhanced needs for internal combustion engines for airplanes, automobiles, tanks and motor boats, the manufacture of fuming sulphuric acid, in which platinum is employed as a catalyzer or changer, important in munitions manufacture, and in the manufacture of nitrogen from the air, also required for explosives.

Clinical Notes, Suggestions, and New Instruments

HERNIA THROUGH THE FORAMEN OF WINSLOW: REPORT OF A CASE

J. E. ENGSTAD, M.D., GRAND FORKS, N. D.

H. B. was referred to me by Dr. Knutson of Buxton, N. D., and admitted to St. Michael's Hospital in this city, about midnight, August 3, suffering from intense pain in the epigastric region.

The patient gave a history of sudden attack of pain while lifting a heavy object about twelve hours before admittance. The family physician was called, who immediately recognized the gravity of the case and ordered the patient sent to the nearest hospital. The journey of more than 20 miles was accomplished in an automobile improvised as an ambulance.

The abdomen was very rigid and sensitive to pressure, and a tense mass was felt in the right epigastric region. The pulse was about 36, heart beats 90, the organ being in a state of auricular fibrillation, and temperature, 103. The kidneys and lungs were normal. After a speedy preparation a long incision was made, and immediately there protruded large masses of dilated and congested intestine filled with fecal accumulation.

The strangulated intestine was soon recognized as being a part of the upper portion of the jejunum, about 75 cm. from the fossa of Treitz, the strangulated portion being caught in the foramen of Winslow. Traction was first made to relieve the impacted intestine, but the strangulated loop had already become edematous, and it was found necessary to introduce the tip of the index finger into the tight opening, carefully severing first the peritoneal covering and gradually the connective tissue of the opening, extreme care being exercised not to injure the immediately overlying structures, the portal vein or the common duct. All the structures underlying these canals had to be cut before the impacted loop could be released, the latter being accomplished by application of moderate traction.

The loop was immediately covered with warm packs; the intestine was then opened and emptied of pancreatic fluid and bile, after which the opening was closed by the usual intestinal sutures, silk and catgut being used.

The injured intestinal tract at once showed unmistakable signs of restored circulation. The operation was completed by the introduction of two small drains and the usual closure.

No effort was made to close the large foraminal opening, this omission being based on, first, the supposition that an enlarged opening would not again implant any loop of the intestine that might be forced into the cavity, and secondly, the great danger of traumatizing the vein.

The drains were removed the second day.

The patient rallied immediately, and the progress toward recovery was rapid and without any incident up to the tenth day, when, without any previous warning, there was a rise in the temperature, the wound opened up, and a profuse serous discharge appeared. This rapidly changed in character, at times to bile and pancreatic fluid. The fat underlying the skin rapidly sloughed away, and on the whole the case looked rather unfavorable. On the thirteenth day an orange seed appeared in the discharges, which immediately relieved our misgivings, for instead of a fistula of the common duct, we now knew that we had a small intestinal leakage from the drainage incision in the intestine, which was about 40 cm. from the duodenojejunal fossa, or 60 cm. from the ampulla of Vater. The secretions from the fistula appeared at times almost unchanged bile and pancreatic fluids.

In due time the opening was packed, which controlled the discharge of the secretions, and the wound healed rapidly. The patient was discharged from the hospital five weeks after the operation, with good health, the wound being healed with the exception of a space about an inch square, filled with granulation tissue.

COMMENT

The large death rate from operative procedure for hernia into the foramen of Winslow is due, no doubt, in a great measure to the constriction of the intestine in its most vital portion, the so-called medulla oblongata of the intestinal tract, where are located the secreting glands of the upper bowel, whose functions are to supply the still partially mystifying hormones, whose reabsorption is speedily followed by death.

Bile and pancreatic fluid are constantly pouring into the distended intestine, adding their quota to the rapidly accumulating deadly contents of the dilated intestine.

The vital point of any operation for the relief of accumulation in this part of the intestinal tract is the mechanical emptying of all accumulated fluids by a large transverse incision in the intestine at a point midway between the normal portions. The emptying should be performed by gentle milking; otherwise the traumatized blood vessels might become injured and emboli might rapidly form in the mesentery veins or arteries, which, of course, is concomitant with death of a segment of the bowel.

Whether the introduction of the drains predisposed to the fistula is a problematic question.

REPORT OF CASE OF FAT EMBOLISM

R. M. HARBIN, M.D., ROME, GA.

History.—A married woman, aged 56, rather compact and stoutly built, sextipara, weighing 150 pounds, had had normal health in every respect until two years before admittance to the hospital, when she suffered an attack of appendicitis which passed off in three or four days. Aug. 12, 1918, there occurred a more severe attack in which the bowels had been made to move with difficulty. Two months later there was another attack with diarrhea, and subsequent difficulty was experienced in moving the bowels. This attack passed off in ten days, leaving tenderness diffused over the right abdomen. This persisted until the attending physician advised the patient to enter the hospital, November 15.

Examination.—The heart and lungs were normal, and blood count revealed: red cells, 3,860,000; white cells, 7,400; hemoglobin, 80 per cent.; polymorphonuclears, 63 per cent.; large lymphocytes, 3 per cent.; eosinophils, 1 per cent; small lymphocytes, 32 per cent. Urine and feces were negative. Palpation revealed a diffuse induration in the right lower quadrant. The barium-buttermilk meal revealed normal size and motility of stomach and delayed passage at ileocecal valve, and then stagnated at the caput coli at forty-eight hours. A colon injection of barium-buttermilk joined this delayed bolus.

Operation and Result.—A diagnosis of intestinal obstruction from adhesive remains of a previous peritonitis was made, and laparotomy advised and executed. After morphin-gas-ether anesthesia, through a 6 inch right rectus incision there was revealed a diffuse matting of coils of the lower ileum about the ileocecal junction. The operation was tedious, and the manipulations were severe, lasting two and one-half hours. The remains of the appendix lay buried in dense adhesions in the right iliac fossa. In the dissection of these bands of adhesions, quite a portion of the parietal peritoneum was destroyed, and it was found impossible to cover the denuded area.

Apparently the patient stood the operation well, reacting to consciousness promptly, and all the time retaining a pinkish color. Just before operation the pulse was 84 and temperature 97, and she left the operating table with a pulse of 98, which remained unchanged for seven hours, when it rose to 106 and then to 124. She had had two doses of morphin, one-eighth grain each. She became restless, with occasional vomiting. One quart of saline infusion had been given by rectum. Twelve hours after operation she complained of air hunger, yet the skin remained somewhat pinkish. The pulse was imperceptible at the wrist, and the heart sounds seemed frictioned and souffled. As we feared a concealed hemorrhage, the incision was opened after nitrous oxid-oxygen anesthesia, which was preceded by one-fourth grain of morphin and 1/150 grain of atropin. The peritoneum was tense and, when opened, about 100 c.c. of a soupy fluid escaped from tension. The patient died twenty-four hours after operation.

Necropsy.—The incision was opened, and 30 c.c. of fluid, aspirated from the pelvis, showed globules of fat. The left ventricle was tapped, and 50 c.c. of blood had the appearance of dark reddish orange juice. This specimen within ten minutes formed a firm coagulum quite the size of the original quantity of blood. This specimen was beaten up and washed with ether, which was then evaporated. The residue, on being stained with sudan III, showed fat. The peritoneal fluid was treated in the same way and showed quantities of fat.

INTRAPERITONEAL ABSCESS CONTAINING ROUNDWORMS

F. H. JACKSON, M.D., HOULTON, MAINE

This case is reported because of its rarity. In the surgical literature cases have been reported in which the ascaris has entered the larynx and various portions of the hepatic system. Intestinal obstruction has been caused by masses of the parasite, and other cases similar to this one have been reported.

History.—B. B., a girl, aged 16, was admitted to the Madigan Memorial Hospital under my care, April 27, 1917. She had been operated on in the same institution, Jan. 20, 1916, for an intraperitoneal abscess caused by a ruptured appendix. Following the operation she had been critically ill for a number of days, but was discharged as well, March 4, 1916. The hospital records do not have any statement from the attending surgeon as to whether or not the appendix was removed. April 27, 1917, she came for relief of very severe pain in the entire lower abdomen. The temperature was 101, the pulse 120, and there was intense nausea and profuse vomiting. The present severe clinical condition had been present about thirty-six hours; but for several days the patient had not felt entirely up to par. Up to about forty-eight hours before her admittance to the hospital she had felt well excepting that for about two weeks she had had more or less residual tenderness in the lower right abdominal quadrant, cramplike pains that at times were quite severe, and more or less tendency to nausea. The climax seemed to come about thirty-six hours before admittance, when she had a frightful sudden attack of pain in the lower abdomen. The bowels became distended, no relief was obtained from cathartics, which were promptly vomited, and very little from enemas.

Examination.—The girl looked far more ill than the recital of the history would indicate. She was of a dirty greenish yellow color, was covered with a cold, clammy sweat, and moaned with pain. The lower abdominal muscles were extremely rigid, and there was abdominal distention. The muscular rigidity was of a boardlike nature on the right, and one got the indistinct feeling of a mass in the lower right quadrant. In view of the previous operation and the present findings the diagnosis was an intra-abdominal abscess, of appendical origin, with a low grade intestinal obstruction.

Operation.—Entrance to the abdomen was through the old operative incision, taking out the scar. The omentum was adherent to the intestine and pelvic contents. A large abscess was found on the right at the level of the pelvic brim. I went through the adherent omentum into the abscess, because removal of the adhesions seemed unwise in the condition of the patient. The abscess contained something like a quart of intensely fetid pus, the odor of which was frightful, and two live lumbricoid worms. The abscess wall had a look that was very suspicious of tuberculosis. No search was made for the appendix, and only a very limited one to see if there was any opening between the intestine and the abscess cavity. None was found, and the cavity was drained by a large cigaret drain, the abdominal incision being left with a rather generous opening. It was felt that one had better take chances with an incisional hernia than with any failure to drain such a fetid mass.

Postoperative Course.—The condition of the patient for the first seventy-two hours following the operation was critical.

She was given a continuous rectal drip of sugar solution with one intravenous injection of physiologic sodium chlorid solution. Careful examination of the stools for several days disclosed no more worms. The patient was discharged from the hospital May 24 with a solid wound and in good physical condition. She has remained well up to date.

PREPARATION OF MEDIUMS: A NEW HYDROGEN-ION CONCENTRATION METHOD *

LYMAN J. STRONG, M.D. (BUFFALO)
First Lieutenant, M. C., U. S. Army
NEW YORK

That bacteria may grow, the invironment must be of about the same acidity or alkalinity; for bacteria to be pathogenic, this environment must be near the alkalinity of the human tissues. The adjustment of mediums to this alkalinity by methods now in common use is time consuming and often unsatisfactory. Carefully made standard solutions, with fine titration, often produce a product after sterilization that is found to have an entirely different reaction. If separate tubes or flasks are investigated, one is surprised to find the wide variation that exists in different containers of apparently the same medium. This is especially true of sugar mediums.

Much work has been done on indicators, but each has its fault as a general indicator: Litmus is not sensitive enough. Andrade's is suited only for aldehyd formers. Fuchsin does not have a suitable end-point. Brilliant green is inhibitory. Phenolphthalein is not indicating in acid. Others are either antiseptic or their end-points are wrong.

About two years ago, while I was working with the hydrogen-ion concentration of human blood serum, it struck me that phenolsulphonephthalein might be used: it has a fairly long end-point, which is of the same alkalinity as the human tissues; it is injected into the blood stream in kidney functional work with no damage to the human tissues. A year ago we began using it at the Buffalo General Hospital, and the results were so good that all other methods have been discarded. Two stock mediums are all that we use now: one fluid broth, the other solid agar. The preparations are the same except that one contains agar.

PREPARATION OF MEDIUM

Broth is prepared from minced lean beef, 2½ pounds (1,000 gm.), and distilled water, 1,000 c.c., which are infused in the ice box for twenty-four hours, filtered through glass wool, heated to the boiling for two minutes, and again filtered through glass wool. Now are added peptone, 10 gm.; sodium chlorid, 5 gm.; enough water to make 1,000 c.c., and the white of one egg. The mixture is heated to a boil and filtered through glass wool until clear. A 1 c.c. ampule of phenolsulphonephthalein is added. About 5 c.c. are poured into each of two test tubes. To one test tube a drop of any acid solution is added; to the other, a drop of sodium hydroxid solution. Then, drop by drop, are added acid (hydrochloric acid solution) or alkali (sodium hydroxid solution) until the color of about 5 c.c. poured into a third test tube is between the color of the other two test tubes. The hydrogen-ion concentration of the entire batch of medium will now be about p_H 7.5 This is the same as that of average human blood serum. Should a precipitate form, it may be filtered again through glass wool; paper or cotton may be used for filtration, but these remove the vitamins, and unless serum or blood are to be added later, some bacteria will not grow well.

ADVANTAGES

The advantages of this method are:

1. No standard solution is used: any solution will do.
2. Any tube that changes reaction can be told at a glance and discarded before inoculating.
3. Growth always produces a change in color.
4. Growth of all organisms is much faster and luxuriant.
5. Much time is saved, and there is a more desirable product.

* From the Rockefeller Institute.

BONE SKID

W. C. F. WITTE, M.D., AND RAYMOND L. SCHULZ, M.D., MILWAUKEE

During the open reduction of two cases of fractures of the lower end of the tibia that were somewhat impacted and had remained unreduced for periods of two weeks, considerable difficulty was encountered. The fractures were both of the spiral type, with an irregularly serrated fracture line and overriding and rotation of fragments. There was so much muscle tension during the period of contraction that the bony fragments could not be separated to any extent. Angulation and bringing the fragments together in proper alinement were impossible on account of the proximity of the fractures to the lower end of the tibia. A curved periosteal elevator was used as a pry, but it slipped up into the medullary cavity of the bone as soon as it got beyond a certain angle. To obviate this, an instrument was

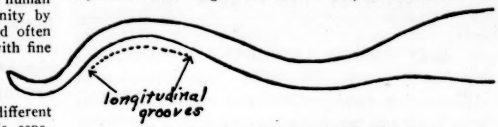

Fig. 1.—Curved portion of bone skid, same size.

made, having a short curved tip and a larger secondary curve in the opposite direction immediately following (Fig. 1). Longitudinal grooves were cut into the concave side of the second curve, to serve as a guide for the roughened edges of the bone to slide in. This instrument was used in another case and found to be a great aid in prying the fragments of a fracture apart so as to make reduction much easier. Further cases for testing the value of this instrument have not been available for some time. It was thought best, therefore, to report the idea with the hope that others might have an opportunity to try it.

The fracture is exposed in the ordinary way, and if the fragments cannot be reduced readily, the tip of the bone skid is inserted beneath the overriding fragment in such

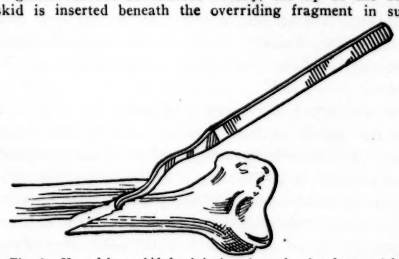

Fig. 2.—Use of bone skid for bringing the ends of a fractured bone into apposition.

a way as to engage the edge of the fragment lying beneath it, as shown in Figure 2. The handle of the skid is then swung around so that the edge of the overriding fragment glides in the grooves of the second curved portion, which then acts as the fulcrum of a lever to pry the fragments apart. At the same time, the fragments are manipulated and guided by bone forceps so as to bring the fragments into proper alinement. When this is done, the skid is removed and the fragments are allowed to approximate, and are fastened together as desired. Since a tremendous leverage can be obtained, care must be used to avoid breaking out a segment of the cortex of the bone.

Insomnia.—Sleeplessness is due to many causes. The most fertile cause is irritation of the brain by messages from the abdomen. I would venture so far as to say that flatulent dyspepsia is the cause of nine out of ten cases of insomnia.—G. King Martyn, M.D., *Medical Press and Circular.*

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SATURDAY, FEBRUARY 8, 1919

ENCEPHALITIS LETHARGICA: A NEW DISEASE?

Last spring considerable alarm was awakened in Great Britain at the outbreak, notably in London and Sheffield, of cases of illness presenting a group of unusual cerebral or cerebrospinal symptoms. The distinctive features appeared to be those of an acute general disease associated with a condition of increasing languor, apathy and drowsiness, passing into lethargy; progressive muscular weakness passing into complete disablement, and a combination of various cranial nerve palsies, of which ptosis, squint and nystagmus were characteristic signs. The cases were provisionally diagnosed botulism, toxic ophthalmoplegia, epidemic stupor, epidemic lethargic encephalitis, acute poliencephalitis, poliencephalomyelitis, bulbar paralysis and Heine-Medin disease. There is some evidence that a comparable illness has appeared in France and in Austria.

At the outset there was a tendency to ascribe the obscure malady to food infected with *Bacillus botulinus*. The difficulties then prevailing in the war-time food situation helped to focus attention on possible outbreaks of botulism. Other hypotheses presently were based more directly on the nervous symptoms such as appear during an acute specific fever which may affect any part of the central nervous system and cause a variety of manifestations dependent on the portion affected. Accordingly, suspicion as to the appearance of acute poliomyelitis was prominently raised. Still other suggestions referring the etiology to some nonbacterial poison, such as benzin used in the manufacture of certain butter substitutes, or to vitamin deficiencies in the dietary, were pressed for recognition.

An investigation of wide scope was undertaken by the experts of the Local Government Board through their Medical Research Committee.[1] The recently published results practically negative the diagnosis of botulism, so far as association of the illness with infection from food is concerned. Dr. McIntosh of the London Hospital failed entirely to recover the bacillus of Van Ermengem from tissues and fluids in fatal cases and from articles of food that had been regarded with suspicion. He was also unable to obtain evidence that the serum from recovered patients agglutinated *Bacillus botulinus* or protected animals from its toxin. In fact, the histologic examination of the changes in the nervous system pointed to an acute infection rather than to an intoxication. Furthermore, the epidemiologic evidence was scarcely in harmony with a food-poisoning theory; thus, for example, two typical patients were breast-fed infants. Finally, botulism appears to be a nonfebrile disease according to the most recent studies of its manifestations.[2]

The British investigators have also made careful inquiry into the possible identification of the new disease with acute poliomyelitis. Professor Marinesco, the neurologist of the faculty of Medicine at Bucharest, assisted in ascertaining the pathologic features related to the nervous systems of the victims. His observations, in addition to those of McIntosh, show sufficient points of divergence from the classic picture of poliomyelitis to furnish presumptive evidence against the view that the English cases were merely encephalitic varieties of poliomyelitis. None of the postmortem material yielded the pleomorphic coccus described by Rosenow in acute poliomyelitis. Cultures from the blood were invariably sterile, and cultures from the cerebrospinal fluid, nasopharynx and feces failed to show the constant presence of any particular class or type of micro-organism. The central nervous system showed an inflammatory process resembling that observed in general paralysis, syphilis, sleeping sickness and acute poliomyelitis, and the diagnosis between the lesions and those of the last named disease is difficult from the histologic indications alone.

The strong clinical, epidemiologic and pathologic evidence that encephalitis lethargica is distinct from classic poliomyelitis is supported in a way by the animal experiments undertaken. Inoculations with emulsions of nervous material, under conditions in which poliomyelitis has been transmitted to monkeys, failed to produce a paralysis. Sir Arthur Newsholme, the medical officer of the Local Government Board, frankly admits that all these negative findings are far from satisfactory. The speedy cessation of the outbreak has put an end to further investigation at present. In suggesting that the disease is a malady *sui generis*, anatomically and clinically distinct from analogous affections, we need not forestall further study whenever a suitable opportunity is presented by the identification of suspicious cases. As the first necessity for such a course is early and complete information of all cases of the disease in different places, it has been decided as a

1. The Report of an Enquiry into an Obscure Disease, Encephalitis Lethargica, Reports to the Local Government Board on Public Health and Medical Subjects, New Series No. 121, London, 1918, p. 74.

2. Dickson, E. D.: Botulism, a Clinical and Experimental Study, Monographs of the Rockefeller Institute for Medical Research, No. 8, July 31, 1918.

temporary measure to make encephalitis lethargica compulsorily notifiable for a period of one year throughout England and Wales.

From a practical standpoint it has been suggested that the outbreak which has been described may be associated with a breakdown of immunity. Lowered resistance to a usually harmless saprophyte or a "conditional" parasite may be conceived to permit harm from organisms ordinarily harbored with impunity. The practical indication in the absence of further knowledge follows familiar hygienic dicta. We must, says Newsholme, enlist all the resources of personal and public hygiene in an endeavor to influence favorably the potential energies of the body and tissue cell resistance. At the same time, he adds, it is clearly of importance to pursue research not only to ascertain what pathogenic agent is concerned, but also into the factors of individual predisposition and correlated resistance, the variations of which are subject to so many influences.[3]

THE RESULTS OF AERIAL SHOCK AND THE CLASSIFICATION OF THE INJURED

As an outcome of the war, light has been thrown on many obscure neurologic problems. In this domain the effect of shell explosions on the organism has offered a particularly fertile field for observation and research. Now that the war is over, it appears that in no field will the ultimate results on the individual be so difficult to evaluate as in this. And, accurate evaluation is important not only in the interest of the state, but in some cases at least in its bearing on the recovery of the patient. Bonnet[4] has prepared a description and in some measure an explanation of injuries resulting from aerial shock and not directly due to missiles or from poisoning from the gases generated. In his conclusions he briefly directs attention to the classification and pensioning of soldiers injured by shell explosions as recommended to the French authorities by French neurologists.

After considering the results of the experiments of physicists on the effects of explosions, and focusing attention on the extent and power of the aerial disturbance from the various explosives used in warfare, Bonnet passes to observations made at the front by himself and his confrères, under what must have been great difficulties. He agrees with other competent observers that it is the shock of the advancing air wave generated by the explosion that causes the damage, and that the extent and severity of this depends on the locality of the burst—open spaces, trench or dugout. None of these points are new, but they cannot be too often repeated, as they are fundamental to the explanation of the results of explosions.

Observations were made on the arterial pressure of soldiers during shell fire. It was found that the bursting of shells invariably increases arterial pressure in those in its vicinity; but if no pathologic lesion results, the pressure returns to normal, after a period, depending on the amount of shell fire and the condition under which the burst occurs. This increase could be demonstrated in old soldiers, even though they showed not the least emotion at the burst of the shell and were protected from danger. Bonnet concludes that the shell burst affects all people in the vicinity, and that these variations in arterial pressure are not emotional but a reflex sensory disturbance from the atmospheric pressure, the earth vibrations and the noise. He admits that in many these reflex sensory disturbances are influenced and increased by psychic and emotional influences, such as insomnia, fatigue and the association of ideas. While the influence on the organism of the increase of pressure from one or two shells may be negligible, this increase coming from thousands of shells has to be reckoned with in those with latent tendencies to certain diseases, such as syphilitics and those with an unstable sympathetic system. It is to this, together with fatigue, that he attributes the increase in warfare of such diseases as general paralysis and exophthalmic goiter.

The explanation of nervous and pulmonary lesions following shell explosions offered by Bonnet is that the aerial wave compression acts primarily on the superficial capillaries and blood vessels as well as those of the abdominal cavity: in short, on those not protected by nature from pressure. There is thus formed a blood column, which is driven like a battering ram into incompressible cavities like the thorax and the cerebrospinal cavity. As a result, the smaller vessels in these cavities, many of them terminal, may rupture or thrombose, causing partial anemia of surrounding tissues with a varying amount of injury. The eye and the ear are especially liable to suffer, the former by its position exposed to pressure and the latter by its physiologic adaptability to receiving pressure. It is undoubtedly true that the internal ear may be damaged without rupture of the drum, if this structure is sufficiently elastic. Gas emboli play little part, because the compression wave is of too short duration.

The question is often asked: Why do concussion effects occur so little among artillerymen? Bonnet would answer this by saying that in gun fire the explosion is dynamically feebler and is purposely directed to be of relatively long duration in order to give movement to an object, while the explosion of the shell results in the sudden development of enormous energy transmitted onward as atmospheric waves.

The early separation of shock patients from hysterical patients is advisable. As early as possible,

3. The term "encephalitis lethargica" seems to have been applied first by von Economo, who described the symptoms as they occurred in Austria (Wien. klin. Wchnschr. **30**: 581, 1917.

4. Bonnet, Maurice: Contribution à l'étude des effets des explosions de guerre sur l'organisme, Nancy, A. Crépin-Leblond, 1918.

patients with organic or mental shock should be sent for treatment to the rear, the hysterical patients returned to the front. Those with doubtful or troublesome cases, he believes should be sent to a special neurologic center, for the sooner psychotherapy is practiced by a specialist the better for the patient. He assigns an important rôle to the sympathetic system in shock, and advises not only that the patient be kept quiet but also that suprarenal and thyroid treatment be used judiciously.

Quite important is the suggestion in regard to compensation for injury or disease caused by warfare. The French soldier incapacitated for service is usually classed as réformé No. 1 or réformé No. 2. In the réformé No. 1 class are soldiers who are discharged permanently as being incapacitated for further military service. In the réformé No. 2 class are soldiers who are discharged temporarily because of some incapacity which, however, is remediable. In war time these soldiers are reexamined every three months, and then may be returned to service or again temporarily discharged for three months. The man in the réformé No. 1 class may receive a pension if his condition in life shows that he requires it, but he always receives a lump sum as an indemnity based on the amount of disablement and calculated in percentages of total disablement from 10 to 100 per cent. On the recommendation of Babinsky, the Society of Neurology and Psychiatry adopted the following conclusions:

1. Hysterical patients should be granted neither discharge nor indemnities. If the hysteria is associated with organic disorders, no cognizance of the hysterical manifestations should be taken in valuing the degree of incapacity.

2. In cases of reflex nervous manifestations following war traumatism that prove refractory to treatment, the patient should be transferred to an auxiliary service or be discharged temporarily with an indemnity valued at from 20 to 50 per cent. of total disablement.

3. For marked neurasthenic states without organic disorders or mental trouble, no indemnities should be granted and only exceptionally discharge, more often auxiliary service.

In regard to mental conditions, the same society adopted the following recommendations:

In acute states, even emotional (*même purement émotionelles*) following shock, the soldier should be discharged with a rate of incapacity between 10 and 100 per cent. without regard to predisposition. For dementia or definite psychic enfeeblement following traumatism, the soldier should be discharged as réformé No. 1 with a rate of incapacity of from 50 to 100 per cent. For chronic psychosis following shock, the soldier should be classed as réformé No. 1 with an incapacity rate of from 20 to 80 per cent. In mania or melancholia first appearing after traumatism, there should be given a temporary discharge with an incapacity rate of from 10 to 40 per cent.

At a meeting of the chiefs of centers of the French medical service with the undersecretary of state for health, it was decided that general paralytics should be discharged in Class 2 (réformé No. 2) except in particular cases in which it was proved that it had been aggravated by military service. In these a rate of from 60 to 80 per cent. of incapacity should be given. Epileptics should be placed in Class 2 except when traumatism or infection antedated the appearance of the first grave epileptic seizure. These should be grouped in Class 1 (réformé No. 1) with an incapacity rate of from 10 to 80 per cent.

To these groups Bonnet would add cases of exophthalmic goiter. He rightly insists that pulmonary lesions and lesions of the organs of sense due to shell explosion ought to be classified and rated as war wounds. He recommends that from time to time those discharged should be reexamined because a number invalided are capable of improvement.

Such detailed study as is being given in all the Allied nations to the problems of the wounded and otherwise incapacitated soldier must inevitably yield much that is of value to the future of medical science. It is, moreover, an adequate guarantee that the victorious nations realize the extent of their obligation to the fighting man and will do their utmost to meet that obligation.

LITERATURE AS AN AID TO RESTORATION

The war, which has in greater or lesser degree affected all the civilized nations of the earth, has given rise to novelties of performance and innovations of thought entirely unanticipated. Aside from the institution of new devices and operations that have demanded unusual ingenuity on the part of both the offensive and the defensive elements concerned, the very magnitude of many of the projects has tended to make ancient provisions in relation to them inadequate if not actually useless. The proportions of the war have been so vast, the numbers involved so huge, that new types of ability have been called for to manage the enormous machinery and its indescribable complexity. Tremendous efforts have become necessary to alter the inertia of traditional procedures.

A striking illustration of this, as it pertains to men rather than materials, is afforded by the problem of the care, reeducation and return to civil life of disabled soldiers and sailors. Medical attention has, it is true, been bestowed liberally on the unfortunate victims of previous wars. Today, however, there is a well founded realization that something more than first-class hospital treatment and loudly voiced gratitude is due to those who have become disabled in their response to the call of duty. The thought of the disabled, wrote Lord Charnwood, cannot fail to awaken first of all a deep feeling of compassion, and, in a sense, of course, it claims all our compassion. But something is wrong, he adds, with the man in whom that sentiment can remain merely or even mainly sorrowful. All visitors to military hospitals have the same experience. They go there expecting to see something profoundly sad; they do, in fact, see sights more horrible than they had previously imagined; but, Lord Charn-

wood concludes, the devotion and resourcefulness of the healer, the courage and the constant unselfishness of the sufferer, surpass their expectation no less; and they come out full of a strange, deep exhilaration, an enduring remembrance in which the solemnity of death is quite swallowed up by the joy of life.

As never before, it has become necessary in every country involved in actual fighting, to carry the indispensable encouragement beyond the period of hospital residence and to institute on an elaborate scale schemes of practical helpfulness. Men must be encouraged materially and, above all, spiritually, to "carry on." Pity of the stagnant sort must be replaced by positive organization "for training the disabled man, for opening to him a satisfactory place in life, and incidentally for carrying his cure farther."

We have already called attention to some of the agencies that have been created in this country to do what no pension system can accomplish.[1] A product—perhaps it should be designated a tool—of the restorative scheme is seen in a diversity of literary efforts intended to further the plan. As early as July, 1917, a journal entitled *Recalled to Life* was established by Lord Charnwood. Under the new name of *Reveille*, the quarterly has become a review of all that is being done abroad for the disabled sailor and soldier. Under the editorship of John Galsworthy, two numbers published since last August have exhibited a truly unique contribution to the story of what restoration means "to those who are being restored, to those restoring them, but even more—to the nation at large." Renowned names in literature and art have created a unique magazine which aims to steer its readers between the roads of "facile optimism" and "easy-going pessimism." *Reveille* breathes forth a new spirit of encouragement, and illustrates in a splendid way how psychologic and material forces can make life useful even under depressing conditions. The medical fraternity will do well to study these novel literary devices as hitherto unappreciated aids in the art of restoration.

1. Carry On, a magazine on the reconstruction of disabled soldiers and sailors, edited by the Office of the Surgeon-General, U. S. Army. Vocational Rehabilitation of the Disabled Soldier, Current Comment, J. A. M. A. **70**: 1767 (June 8) 1918.

INTESTINAL PROTOZOA IN THE TROPICS

Of the numerous and varied forms of life that are known to enter and at times inhabit the alimentary tract of man, comparatively few, aside from bacteria, have established a reputation for pathogenicity. Larger organisms like the intestinal worms have, of course, long been regarded as highly detrimental. Their noxiousness has been ascribed primarily to the harm these parasites might do mechanically or locally; and not until more recently has the possibility of the production of soluble poisons by the invading organism been reckoned with. The occurrence of eosinophilia in the leukocytes of the blood is itself a significant indication of response to chemical products rather than to the mere mechanical irritation of the parasite.

Among the smaller forms, the trypanosomes and coccidia are justly the objects of grave suspicion whenever they exhibit their presence in the body. Some of the intestinal amebas, like the *Ameba coli*, have also given indications that they may produce toxic products. Various intestinal flagellated and ciliated protozoa, however, appear to exist in the intestinal tract for long periods without causing any trouble to the host. They seem not to become obligatory parasites in the objectionable way of other forms mentioned. Consequently they have received little consideration from a pathogenic standpoint.

The medical zoologist[1] of the University of the Philippines recently stated that the time has arrived when workers in the field of parasitology should fairly face the situation presented by the intestinal flagellates. They have been under suspicion for many years, during which time there has been gradually accumulating a mass of evidence against them. No progress will be made if we are to continue to employ, as our criteria of pathogenicity or nonpathogenicity, the presence or absence of blood and pus in the stools.

It is conceivable that lack of resistance or some other change on the part of a host may confer new powers on a presumably harmless parasite. There can be little doubt that altered environments profoundly influence the pathogenicity of bacteria. Why should a similar possibility not arise in the case of other microbiotic forms? Pending the extension of knowledge about them we may be prepared to expect actual invasion and destruction of tissues even by supposedly nonpathogenic forms. Haughwout adds to this possibility the warning that such organisms may actually interfere with absorption because of the adherence of large numbers of parasites to the surface of the epithelium. Serious mechanical irritation of mucous surfaces even by these lowly invaders is likewise not excluded. The production of substances of a high or low degree of toxicity, even if they are merely the products of parasite metabolism, needs to be reckoned with more than it has been in the past. The experience of trained parasitologists in the tropics where alimentary protozoan invasions of the body are more common seems to point to the importance of more intensive study of the possibilities in this field. Such apparently unexplainable conditions as "philippinitis"—the "tired feeling" ascribed without strict justification to heat, sunlight or other climatic factors—may find a solution in the frequent presence of supposedly harmless protozoa. At any rate, in the

1. Haughwout, F. G.: The Tissue-Invasive Powers of the Flagellated and Ciliated Protozoa, with Especial Reference to Trichomonas Intestinalis, A Critical Review, Philippine J. Sc. (B) **13**: 217, 1918.

absence of more detailed knowledge at present there is some propriety in the warning of Haughwout that "the flagellated intestinal protozoa should be viewed with suspicion and regarded as pathogenic until the contrary is proved beyond dispute."

Current Comment

THE BLOOD PLATELETS

The "third class of formed elements" of the blood, now generally spoken of as blood platelets, has been the subject of much speculation and almost irreconcilable clashes of opinion. The French hematologist Hayem at one time regarded these structures as stages in the formation of red blood corpuscles. There can be no doubt, to quote the language of one physiologist, that the stuff known as blood platelets stands in some very important relation to the clotting of the blood. The greatest uncertainty relating to this may be expressed by the question as to whether they are morphologic structures essential in initiating the process of coagulation or whether, on the contrary, they are a product of this change. Indeed, they have been described as liquid crystals rather than structural cells. The microscopists know that the platelets have a specific affinity for basic dyes and that even after their first appearance they are very unstable, tending to undergo further alteration unless they are permanently fixed by some suitable procedure. It has even been said that the various fixing fluids that have been recommended for demonstrating the blood platelets actually produce rather than merely preserve them. Such is the uncertainty. If a determination of the origin and significance of the platelets is to be appealed to in unraveling the complexity of the problem of blood clotting, it is certainly not without significance that these illusory structures are not found in other than mammalian bloods, despite the fact that the circulating fluid of fishes, birds and reptiles clots. Nor have the platelets been discovered in the serous fluids of mammals. Attention is naturally called in this connection to the coagulable lymph. The reports of several investigators on the occurrence of platelets in lymph reveals a disagreement among the histologists of this fluid.[1] The latest opinion based on experimental evidence, from Jordan[2] of the University of Virginia Department of Anatomy, completely substantiates Howell's assertion that the lymph from the thoracic duct lacks platelets completely. If, then, it is asked how lymph can contain clot-facilitating substances generally believed to be liberated by platelets, the explanation may be found, according to Jordan, in the instability of these elements. In their passage (relatively slow as compared with the blood circulation) through the lymphatics to the thoracic duct, he suggests, the relatively small number that may have entered the system may have entirely disintegrated, meanwhile contributing the relatively small amount of prothrombin and thromboplastin characteristic of lymph; to which the lymphocytes under favorable conditions may contribute a certain additional amount, as suggested by Howell. Considering the origin of the bulk of the lymph from the plasma by way of the tissue spaces, and the continual disintegration of blood platelets, Jordan adds, the presence of these elements (thrombin and thromboplastin) in lymph can be accounted for, at least in part, on the basis of this relationship between blood plasma and lymph.

1. The contrasting views are expressed by: Schäfer, E. A.: Textbook of Microscopic Anatomy, London, 1912. Howell, W. H.: The Coagulation of Lymph, Am. J. Physiol. **35**: 483, 1914.
2. Jordan, H. E.: The Histology of Lymph, with Special Reference to Platelets, Anat. Rec. **15**: 37, 1918.

THE GALLBLADDER AND THE SECRETORY PRESSURE OF THE LIVER

So far as the bile may be an excretory product, furnishing a device for ridding the organism of disintegration fragments of the blood pigments, its discharge should be more or less continuous; as a fluid facilitating digestive or absorption phenomena, its presence is needed only at certain active stages in the alimentary cycles. The exigencies of the body, says a recent writer,[1] therefore require a continuous excretion of bile by the liver, but a discontinuous entry of this fluid into the small intestine. The discontinuity of the entry of a continuous secretion into the intestine is secured, in the majority of animals, by the existence of a gallbladder, a diverticulum from the bile ducts, in which bile secreted during the intervals between periods of digestive activity is stored up. Not all species, however, have a gallbladder. Its place is taken to some extent by rather large ducts, as in the case of the horse. Judd and Mann[2] have ascertained that all of the extrahepatic ducts dilate after the removal of the gallbladder. This result seems to be due to interaction of the pressure exerted by the liver and sphincter at the duodenal end of the common bile duct. A logical inquiry, therefore, concerns the question of the natural secretory pressure in such species as have no gallbladder. Is it altered in any way that might suggest some compensatory activity to replace the functions of the missing bladder? The pressure at which the bile is secreted has a variety of bearings on the phenomena that may be staged with reference to this secretion and the channels in which it is confined. According to the latest researches of Mann and Foster[3] at the Mayo Clinic, the presence or absence of a gallbladder bears no relation whatever to the secretory pressure of the liver, although the pressure varies considerably in the various species of animals both with and without gallbladders.

1. Starling, E. H.: Human Physiology, 1915, p. 714.
2. Judd and Mann: Surg., Gynec. and Obst. **24**: 437, 1917.
3. Mann, F. C., and Foster, J. P.: The Secretory Pressure of the Liver with Special Reference to the Presence or Absence of a Gallbladder, Am. J. Physiol. **47**: 278, 1918.

THE RETURNED TUBERCULOUS SOLDIER

The returning tuberculous soldier is not likely to prove a serious problem in this country, although it is one to which a certain amount of consideration must be given. There is no difficulty with the bed

patient; at least he does not spread infection. The problem is the man who is suffering from the disease in the incipient form. He can usually be cured or the disease checked, but the treatment is slow and tedious. Sanatorium treatment has many advantages, but sanatorium life becomes irksome and monotonous. Much thought has been given to this subject in Europe. It may be instructive, therefore, to learn of some projects devised to relieve this situation on the other side of the Atlantic. Dr. P. C. Varrier Jones[1] believes that occupation is indicated for all consumptives who are able to work, such work, of course, being regulated in proportion to the condition of their health. He directs attention to the fact that the problem is not purely medical, but that psychology, sociology and medicine are mingled as in no other medical problem. The human element must be the touchstone. The gist of his argument is that, as no man can be expected to submit to the monotony of institutional life for an indefinite period, the remedy is to graft the colony principle on existing sanatoriums. Patients may be employed at their own or allied trades or at suitable occupations that have been taught them. In effect, the suggestion is made that village communities for the especial use of tuberculous soldiers should be established, and that these should be well provided with the amenities of life. One such community has been in existence in England for some time and has thoroughly justified its establishment. It is kinder to the returned tuberculous soldier and better for the community that whenever possible he should be given every facility to earn his living and taught a trade if necessary. The village community system appears to present several advantages for this purpose.

SULPHATES AND NUTRITION

Most foods consumed by man contain mineral or inorganic constituents. Indeed, they are present in all food in the natural state, but sometimes are removed during the processes of refinement such as sugar and the oils undergo. It is taught that inorganic compounds are indispensable in the diet. No less than nine elements—calcium, sodium, potassium, iron, magnesium, sulphur, iodin, phosphorus and chlorin—are included under this caption; yet ordinarily little distinction is made between them with respect to their usefulness to the organism. The commonly used foods vary widely in their content of these elements; thus the cereals furnish little calcium, whereas milk is rich in it. The distribution of chlorin and sodium is likewise decidedly varied. Osborne and Mendel,[2] in a study of the inorganic elements in nutrition, have called attention to the uncertainty of our knowledge as to the indispensability or the minimal requirement of any of the inorganic constituents of the dietary, with the possible exception of calcium and phosphorus. They have pointed out the apparently extraordinary capacity of the body to adjust itself to a varying supply of common salt, and they suggest that what is true of sodium chlorid may apply to other elements in equal degree. Certain it is, at least, that the inorganic elements as they happen to occur in the natural foods do not necessarily represent the optimal or even the minimal needs of the individual. A new illustration has been furnished by Daniels and Rich[3] of the Department of Home Economics at the University of Wisconsin. They have found that despite the occurrence of inorganic forms of sulphur in natural foods so that probably no normal diet is ever free from them, the sulphates are not used to build the organic sulphur complexes of the body. Animals cannot use inorganic sulphates to replace the sulphur-containing amino-acid cystin derived from the proteins. It therefore follows as a corollary that the proteins furnish more than nitrogenous groups to the organism. They must be depended on for the indispensable sulphur-yielding groups also.

1. Reveille No. 2, November, 1918, pp. 240-250.
2. Osborne, T. B., and Mendel, L. B.: The Inorganic Elements in Nutrition, J. Biol. Chem. **34**: 131, 1918. Inorganic Elements in Nutrition, editorial, J. A. M. A. **71**: 660 (Aug. 24) 1918.
3. Daniels, Amy L., and Rich, Jean K.: The Rôle of Inorganic Sulphates in Nutrition, J. Biol. Chem. **36**: 27, 1918.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending January 31, the Medical Corps contained 23,424 officers, a decrease from the previous week of 924. The Medical Reserve Corps contained 626 officers. The total number of medical officers discharged since the beginning of the war is 9,966.

Convalescent Center to Be Established

A convalescent center is to be established in Chickamauga Park under the immediate command of Brig.-Gen. William S. Scott. It is believed that the hospital will be large, consolidated with several of the hospitals that are now being maintained. The decision to establish this center was made known, January 20, after a tour of inspection by Major McLain of the Surgeon-General's Office in charge of the convalescent hospitals in the southeastern department.

New Hospital Construction

Additional hospital construction will be undertaken by the Construction Division of the Army as follows:

Walter Reed General Hospital, Washington, D. C., alterations and additions to the receiving wards and construction of a building for automobile repairs and for mechanics necessary for physical reconstruction exercises.

At Debarkation Hospital, No. 51, Hampton Roads, Va., nurses' quarters, barracks for enlisted men as well as mess barracks for them, diet kitchen, alterations to existing barracks and sheds, a new wharf and a hospital train track and shed. The estimated cost at this point is $195,000.

Eight new ward buildings at Letterman General Hospital, San Francisco, which will increase the capacity of that institution from 1,400 to 1,800, at a cost of about $75,000. The addition to the power plant will cost about $6,000. Two structures for the educational department to be used in training wounded soldiers, and a kitchen capable of preparing meals for 2,400 patients.

Administrative and Construction Work in Hospitals

The War Department authorizes the following statement from the Office of the Surgeon-General:

Officers and enlisted men are needed by the division of physical reconstruction for administrative and instruction work in hospitals. Men who have had technical trade, commercial or agricultural training and experience are especially desired as instructors in the curative workshops.

Authority has been granted by the War Department to transfer to the reconstruction division any commissioned officer, noncommissioned officer, or enlisted man from any branch of the service who is no longer needed in his present assignment and who desires the transfer.

These men will be sent to hospitals functioning in physical reconstruction. The program is now in operation in 25 hospitals with an enrolment of 10,000 disabled soldiers in bedside and ward handicrafts

and studies, technical and trade work in shops, agricultural work in hospital farms and gardens, stenography, stenotype, typewriting and other commercial work, and in general academic work. More than 100 commissioned officers are in charge of the administrative service and in supervisory positions, and nearly 500 enlisted men are in service as instructors.

The reconstruction work will last until the hospitals are cleared, probably by the summer of 1919.

Formation of Commission Sanitaire Des Pays Alliés

A health commission of the Allies has been formed containing representatives of most of the large nations allied against Germany. A subcommission was recently appointed by Professor Santoliquido, delegate from Italy, and president of the commission. The subcommission will meet in Paris on the first or fifteenth of each month to consider the most important sanitary problems regarding demobilization, the occupation of territory formerly invaded, the military occupation of enemy territory as related not only to the health of the troops, but also to the civilians concerned. The personnel of the subcommission is: president, M. le Professeur Santoliquido, Conseiller d'Etat, Délégué de l'Italie dans le Comité de l'Office International d'Hygiène publique; M. le Médecin Principal de premiere Class Maistriau, Commandant du Groupement Régional du Service de Santé à Rouen; M. le Médecin Général Jan; M. le Col. Richard P. Strong, Director Department of Medical Research and Intelligence, A. R. C., M. le Col. W. W. O. Beveridge, C.B., D.S.O., Assistant Director of Medical Services for Sanitation, Professor of Hygiene Royal Army Medical College; M. le Médecin Major Levi; M. Coussol; M. de Lieut.-Col. Médecin Professeur A. Castellani; M. de Cazotte, Ministre Plénipotentaire, Directeur de l'Office International d'Hygiène publique; M. le Docteur Pottevin, Directeur Adjoint.

Orthopedic Clinic Fort Snelling

At the request of the Minnesota Academy of Medicine a clinical evening was arranged for the medical profession of Ramsey and Hennepin counties by the orthopedic staff of U. S. General Hospital No. 29, Fort Snelling, Minnesota. This clinic was held Thursday evening, Jan. 23, 1919, at the Post gymnasium. About 400 of the profession of the twin cities attended. Col. W. J. Mayo and Colonel Sullivan of the Surgeon-General's office were also present. A carefully worked out program was presented with the intention of giving a general outline of the various phases of the orthopedic service at the hospital. Cases were shown accompanied with brief histories and exhibited the various war wounds and the degrees of function accomplished by means of surgical and physiotherapeutical measures adopted. The wealth of interesting cases collected from about 2,000 overseas men furnished a limitless variety for exhibition and inspection. The program included: 1. Presentation of Unusual Overseas Casualties. 2. Presentation of Overseas Orthopedic Joint Results. 3. Presentation of Local Physiotherapy Results. 4. Exhibition of Splints, Provisional Limbs and Limbless Patients. 5. Presentation of Occupational and Shop Activities. 6. Lantern Demonstration of War Wounds and Results of Orthopedic Surgical Treatment. The orthopedic staff is made up of the following officers: Major E. A. Rich, chief of service; Capt. E. A. Klein, asst. chief, in charge of workshops, artificial limbs; Capt. C. F. Clayton, asst. chief, in charge of all orthopedic physiotherapy; Lieut. E. S. Porter, asst. chief, responsible for service paper work and therapeutics of recreation.

Distinguished Service Medal Awards

The Distinguished Service Medal has been awarded to the following officers:

Major-General MERRITTE W. IRELAND, Surgeon-General, U. S. Army, for extraordinary meritorious and distinguished services. "As chief surgeon of the American Expeditionary Forces he supervised and perfected the organization of the Medical Department in France, and to his excellent judgment, untiring efforts, and professional achievements are largely due the splendid efficiency with which the sick and wounded of the American Army have been cared for."

Major-General WILLIAM C. GORGAS, M. C., U. S. Army, retired, for especially meritorious and conspicuous service as Surgeon-General of the Army in organizing and administering the Medical Department during the war.

Brigadier-General Walter D. McCAW, M. C., U. S. Army, whose "counsel and advices in the earlier stages of the operations of the American Expeditionary Forces were a particular benefit to the effective work of the medical department. As chief surgeon of the American Expeditionary Forces in the later operations in the field he maintained a splendid efficiency of that department at a critical time, solving each new problem presented with wisdom and marked ability."

Brigadier-General ALFRED E. BRADLEY, who "As chief surgeon of the American Expeditionary Forces gave his utmost energy and undivided devotion to the duty of organizing the work of the medical department in France, during a period fraught with untold difficulties. To his foresight was largely due the successful operation of that department when it was called upon to meet the demands that were subsequently made upon it."

Major HORATIO N. JACKSON, M. C., U. S. Army, Burlington, Vt., on duty with the 313th infantry, for acts of Distinguished Heroism, near Montfaucon, France, on Sept. 26 to 29, 1918. "Constantly working in the face of heavy machine-gun and shell fire, he was most devoted in his attention to the wounded, always present in the line of advance, directing the administering of first aid, and guiding the work of litter bearers. He remained on duty until severely wounded by high-explosive shells, when he was obliged to evacuate."

Captain JAMES M. McKIBBIN, M. C., U. S. Army, Hagerstown, Md., deceased. On duty with 306th machine gun battalion, for distinguished heroism near Chevieres, France, Oct. 4, 1918. "During a very heavy artillery barrage, which lasted approximately two hours, he displayed a great coolness and courage in dressing and administering first aid to the wounded. Informed that a sergeant had been wounded and was lying between our lines and the enemy's line, he went to administer first aid to him. While in the performance of these duties, under intense fire, Captain McKibbin was wounded by machine-gun fire and later died from the effects of the wound."

Captain MAURICE C. PINCOFFS, M. C., U. S. Army, Baltimore, on duty with Ambulance Company 1, Second Division, for acts of distinguished heroism near Blanc Mont, France, Oct. 9, 1918. "After a withdrawal of the line had been made, he voluntarily crossed an open field under heavy fire to a small wood, where he located a number of wounded men, whose injuries he dressed and directed their evacuation without further casualties."

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Achola—Hall, G. W. (L.)
Anniston—Cryer, G. A. (L.)
Ashville—Williams, D. C. (L.)
Athens—Anderson, W. H. (L.)
Atmore—Webb, A. P. (C.)
Bessemer—Powell, H. B. (L.)
  Waldrop, W. (C.)
Birmingham—Callen, R. (L.)
  Green, E. P. (L.)
  McQuiddy, R. C. (L.)
  Walker, E. H. (L.)
  Weed, W. A. (L.)
Black—Bridges, B. T. (L.)
Brewton—Smith, R. A. (C.)
Cedar Bluff—McElrath, W. S. (L.)
Cordova—Waldrop, A. M. (L.)
Courtland—Ussery, J. A. (L.)
Elkmont—Mayhall, C. V. (L.)
Elmore—Harmon, J. S. (L.)
Empire—Sowell, W. S. (C.)
Fleta—Duncan, T. (L.)
Flomaton—Abernethy, F. L. (L.)
Foley—Armistead, D. (L.)
Fort Payne—Warren, W. E. (L.)
Gadsden—Nicholson, L. B. (L.)
Greenville—Hawkins, M. C. (C.)
Hamilton—White, W. S. (L.)
Hartsells—Booth, W. M. (C.)
Lismen—Moore, W. N. (L.)
Livingston—Scales, J. P. (L.)
Marion Junction—Chisholm, J. R. (L.)
Mobile—Campbell, D. O. (M.)
Montgomery—Hubbard, T. B. (C.)
Prattville—Smith, M. D. (C.)
Roanoke—Hooper, J. W. (C.)
Siluria—Bains, R. C. (L.)
Sylacauga—Boozer, W. H. (L.)
Talladega—Boyd, F. W. (C.)
Taylor—Bates, I. C. (L.)
Tuscaloosa—Kirk, A. A. (C.)
  Searcy, G. H. (M.)
Wadley—Denney, T. H. (L.)

ARIZONA

Buckeye—Leister, F. L. (L.)
Douglas—Randolph, W. M. (M.)
Kingman—Tilton, A. L. (C.)
Mayer—Poole, R. E. (L.)
Tucson—Butler, J. I. (C.)

ARKANSAS

Barfield—Mason, C. H. M. (L.)
Colt—Burch, N. B. (L.)
Fayetteville—Miller, O. (C.)
Foreman—Shirey, W. L. (C.)
Fort Smith—Jeffrey, T. E. (L.)
  Thompson, E. M. (L.)
Garfield—Hodges, G. (L.)
Haskell—Gwaltney, B. (L.)
Hot Springs—Bush, J. W. (L.)
  Lautman, M. F. (L.)
  Snider, W. L. (L.)
Lewisville—Smith, J. R. (L.)
Little Rock—Meriwether, C. P. (M.)
  Riegler, N. W. (L.)
  Snodgrass, W. A. (M.)
Mariana—Bogart, H. D. (L.)
McGehee—Brown, R. E. (L.)
Monticello—Pope, M. Y. (C.)
Osceola—Howton, O. (L.)
Rogers—Moore, W. A. (C.)
Russellville—Hays, J. F. (L.)
Success—Waddle, M. V. (L.)
Texarkana—Kosminsky, L. J. (C.)
  Norwood, F. A. (L.)

CALIFORNIA

Alameda—Nottage, H. P. (C.)
Albion—Wolfe, H. H. (C.)
Alturas—Coppedge, W. E. (C.)
Beaumont—Keith, I. W. (L.)
Berkeley—Gay, F. P. (M.)
  Legge, R. T. (C.)
Escondido—Dotson, E. E. (L.)
Fillmore—Osborn, H. B. (L.)
Fresno—Collins, C. D. (L.)
  Skoonberg—A. E. (L.)
  Willson, L. R. (C.)
Hanford—Motheral, R. (C.)
Hayward—Crum, H. C. (L.)
Huntington Park—Hubbard, C. D. (C.)
Live Oak—Higgins, I. W. (L.)
Los Angeles—Armstrong, M. M. (C.)
  Bashor, E. G. (L.)
  Bonthius, F. A. (C.)
  Davies, B. C. (C.)
  Derrick, J. S. (C.)
  Edwards, F. A. (L.)
  Holgate, C. E. (L.)
  Johnson, W. S. (C.)
  Jones, A. H. (C.)
  Jones, G. P. (L.)
  Lissner, H. H. (M.)
  Misch, H. B. (L.)
  Peter, A. L. (C.)
  Skeel, D. W. (C.)
  Stivers, C. G. (C.)
  Tully, F. E. (C.)
  Young, C. S. (L.)
McKittrick—Degman, S. B. (L.)
Palo Alto—Thomas, J. B. (C.)
Pasadena—Gardner, G. A. (C.)
  Reed, J. R. (C.)
Riverside—McKenna, W. J. (L.)
  Rohlee, W. W. (M.)
Sacramento—King, M. R. (L.)
San Diego—Jackson, J. A. (C.)
  Parks, J. A. (M.)
  Worthington, G. B. (C.)
San Francisco—Dozier, C. A. (C.)
  Hirschfield, M. H. (C.)
  Hunt, T. E. (L.)
  Marion, G. L. (C.)
  Moffitt, H. C. (M.)
  Moss, J. M. (M.)
  Stephenson, H. A. (L.)

San Jose—Beattie, J. I. (L.)
Blanchard, T. L. (L.)
Kapp, M. W. (C.)
Sebastopol—Bixby, W. E. (L.)
Sunnyvale—Barry, R. K. (L.)
Vallejo—Dempsey, R. B. (C.)
Venice—Palmer, B. (C.)

CANAL ZONE

Ancon—Joseph, M. (L.)
Kupfer, N. B. (L.)
Corozal—Murphy, D. J. (L.)
Wender, L. (L.)

COLORADO

Bayfield—Downing, R. L. (L.)
Brush—Eakins, C. F. (C.)
Colorado Springs—Magruder, A. C. (M.)
Denver—Amesse, J. W. (L. C.)
Anderson, G. M. (C.)
Dean, E. F. (M.)
Griffin, E. G. (C.)
Hood, J. R. (L.)
Jones, S. F. (M.)
McCarroll, J. (L.)
McNaught, F. H. (M.)
Triplett, T. A. (C.)
Wetherill, H. G. (C.)
Nederland—McCracken, J. R. (C.)
Rocky Ford—Blotz, B. F. (L.)
Sugar City—Waxham, C. H. (L.)
Trinidad—Espey, J. R. (C.)

CONNECTICUT

Bridgeport—Gold, J. D. (C.)
Danbury—Hefferman, J. M. (L.)
Danielson—Knowles, J. R. (L.)
East Haddam—Crook, J. B. (L.)
Hartford—Starr, R. S. (C.)
Van Strander, W. H. (C.)
Mansfield Center—Cramm, W. E. (L.)
Meriden—Skladzien, T. S. (L.)
New Haven — McDermott, T. S. (C.)
McGuire, C. F. (L.)
Sullivan, J. B. (C.)
North Haven—Higgins, G. S. (C.)
Springdale—Stockton, F. E. (C.)
Thompsonville — Simonton, F. F. (C.)
Unionville—Morrissey, W. T. (L.)
Warehouse Point—Porter, G. E. (L.)
Waterbury—Audet, C. H. (L.)
Willimantic—Simonds, C. E. (C.)

DELAWARE

Wilmington — Marshall, W. V. (L.)

DISTRICT OF COLUMBIA

Washington—Best, T. H. E. (L.)
Cohen, R. (L.)
Cook, H. C. (C.)
Hornaday, F. A. (C.)
Moskowitz, S. N. (C.)
Thomas, W. J. G. (L.)
Young, C. E. (L.)

FLORIDA

Carrabelle—Holloway, L. W. (L.)
Greenville—Smith, A. J. (L.)
Jacksonville—Heggie, N. M. (M.)
Henson, G. E. (M.)
Schnauss, W. R. (L.)
Lake City—Bates, T. H. (L.)
Lakeland—Grower, W. R. (C.)
Miami—Gramling, W. S. (L.)
Palatka—Strong, S. B. (C.)
Perry—Weeks, J. L. (C.)
Raiford—Driskell, S. E. (L.)
Sarasota—Schultz, F. W. (L.)
Tampa—Lancaster, W. J. (C.)
Nelson, R. G. (L.)
Vinson, C. J. (C.)
Wauchula—Garner, J. E. (L.)

GEORGIA

Alamo—Yawn, B. W. (L.)
Albany—Pearson, R. J. (L.)
Americus—Allen, H. B. (C.)
Stukes, J. T. (C.)
Athens—Coleman, E. M. (C.)
Atlanta—Anderson, E. B. (L.)
Bivings, F. C. (L.)
Blandford, W. C. (L.)
Bradford, H. B. (L.)
Colvin, E. S. (L.)
Dowd, K. B. (L.)
Hind, C. J., Jr. (L.)
Klausman, M. (C.)
Redd, S. C. (L.)
Thomson, J. D. (C.)
Augusta—Baker, H. J. (L.)
Bainbridge—Lewis, P. M. (L.)
Blacksheer—Rankin, D. T. (L.)
Blakely—Shepard, W. O. (L.)
Blue Ridge—Daves, F. E. (L.)
Blundale—Carter, J. B. (L.)
Buford—Hutchins, W. J. (L.)
Cedartown—Wood, C. V. (M.)
Claxton—Nevill, P. L. (L.)
Columbus—Jordan, W. P. (L.)
Youmans, J. R. (C.)
Cordele—Daniel, B. (L.)
Whelchel, A. J. (L.)
Decatur—Usery, T. S. (L.)
Douglas—Touchton, G. L. (L.)
Eatonton—Clark, S. A. (C.)
Egypt—Waters, L. T. (L.)
Fairburn—Camp, R. T. (L.)
Merriam, C. S. (L.)
Gainesville—Jones, W. A. N. (L.)
Greenville—Thrash, J. A. (L.)
Griffin—Conn, W. (L.)
Hawkinsville—Bailey, C. B. (L.)
Honey Creek—Sigafoos, J. F. (L.)
Kingston—Ellis, C. L. (L.)
LaGrange—Park, E. R. (L.)
Lindale—Moore, C. (L.)
Macon—Bashinski, B. (L.)
Hall, T. H. (L.)
Marietta—Gober, W. M., Jr. (L.)
Metasville—Wansley, W. B. (L.)
Metter—Simmons, W. E. (L.)
Midville—Sutton, W. H. (L.)
Moultrie—Brannen, C. C. (L.)
Nashville—Selman, G. S. (L.)
Riverdale—Orr, W. L. (L.)
Royston—Brown, S. D. (C.)
Savannah—Barrow, C. (C.)
Blake, H. H. (L.)
Clay, T. S. (M.)
Johnson, G. H. (C.)
Williams, L. W. (L.)
Stockbridge—Pinson, C. H. (L.)
Surrency—Copeland, S. M. (L.)
Tallapoosa—Downey, C. W. (L.)
Tifton—Smith, W. T. (L.)
Tignall—White, E. P. (L.)
Toccoa—Dyar, J. (C.)
Waycross—Oliver, J. A. (L.)
Walker, R. C. (C.)

IDAHO

Boise—Pittenger, F. A. (M.)
Hailey—Fox, E. W. (L.)
Kuna—Fink, M. S. (L.)
Moscow—Carithers, W. H. (C.)
Payette—McDonald, J. L. (L.)
Sandpoint—Stackhouse, C. P. (C.)
Soda Springs—Kackley, E. (L.)

ILLINOIS

Alton—Pfeiffenberger, M. (C.)
Ashkum—Struthers, W. R. (L.)
Aurora—McLallen, R. R. (L.)
Bloomington—Cavons, L. B. (C.)
Freeman, A. R. (L.)
Hawks, J. K. P. (C.)
Breese—Warrick, H. B. (L.)
Brimfield—Moore, J. C. (L.)
Brookville—Brigham, C. R. (L.)
Buckley—Schott, D. (L.)
Buda—Koerper, H. W. J. (L.)
Burlington—Koch, D. (C.)
Champaign—Stanley, O. O. (C.)
Chicago—Almfelt, G. A. (C.)
Andrews, F. L. (L.)
Armstrong, J. L. (L.)
Atwood, R. J. (C.)
Bartholomew, E. K. (C.)
Baum, W. L. (M.)
Besley, F. A. (Col.)
Blaine, E. S. (C.)
Brown, F. C. (C.)
Cleveland, E. S. (L.)
Conway, S. J. (L.)
Cousins, J. A. (L.)
Crowley, W. S. (L.)
Damiani, S. (L.)
Davenport, J. D. (L.)
Davis, C. H. (M.)
Davis, J. F. (L.)
Eisenstaedt, R. (L.)
Epstein, W. G. (L.)
Everhart, A. G. (L.)
Firtik, A. J. (L.)
Flanagan, B. F. (C.)
Gray, G. J. (C.)
Haeffner, A. W. (L.)
Hale, R. P. (L.)
Halvorson, H. J. (L.)
Hansen, O. L. (C.)
Hoffman, H. R. (C.)
Holinger, O. (L.)
Howell, D. H. (L.)
Hunter, P. M. (L.)
Jacobson, L. J. (L.)
Kahlke, C. H.
Kahn, O. L. (L.)
Katz, H. (L.)
Koll, I. S. (C.)
Krugmeier, C. E. (L.)
Kruse, H. (L.)
Lavieri, J. R. (L.)
Lehner, A. E. (L.)
Lescher, H. G. (L.)
Lewin, H. (L.)
MacCracken, W. P. (C.)
Mandel, M. (L. C.)
Mann, S. (L.)
McKinney, I. (L.)
Chicago—McWhorter, G. L. (L.)
Mertz, A. A. (L.)
Meyer, K. A. (L.)
Meyers, J. K. (L.)
Mikkelsen, E. M. (C.)
Morris, A. L. (L.)
Mosley, E. W. (L.)
Neseth, O. S. (L.)
Niles, E. K. (L.)
Oliver, E. W. (L.)
Pisani, V. V. (L.)
Poulson, H. A. (L.)
Price, A. E. (C.)
Quirk, F. J. (L.)
Robinson, M. V. (L.)
Roblee, L. F. (L.)
Roche, R. A. (L.)
Rogers, B. S. (M.)
Rosenblum, P. S. (L.)
Runyan, H. C. (L.)
Sandstedt, G. E. (L.)
Sceleth, C. E. (C.)
Schwartz, A. J. C. (L.)
Schwarzel, F. M. (L.)
Shannon, C. G. (L.)
Sinkler, S. (L.)
Slivka, J. (L.)
Sonneschein, J. B. (L.)
Struges, R. L. (L.)
Sullivan, J. L. (L.)
Tenerowicz, R. G. (L.)
Tomhagan, V. K. (L.)
Tyler, W. (L.)
Way, H. J. (C.)
Wiedder, C. (L.)
Wilkinson, B. (L.)
Williams, W. (L.)
Woitalewicz, J. P. (L.)
Yates, G. P. (L.)
Young, F. W. (L.)
Zaleski, J. P. (L.)
Cicero—Kotalik, F. J. (L.)
Vilna, B. L. (L.)
Danville—Condon, J. J. (L.)
Downs, E. (L.)
DuQuoin—Byrne, J. D. (L.)
East Moline—Donahoe, C. E. (L.)
East St. Louis—Lane, E. H. (L.)
Eldorado—Brann, H. W. (L.)
Enfield—Staley, C. B. (L.)
Evanston—Alexander, W. G. (M.)
Williams, T. J. (C.)
Findlay—Johnson, R. W. (L.)
Galesburg—Praning, E. G. G. (M.)
Georgetown—Fletcher, M. S. (L.)
Girard—Bullard, E. E. (L.)
Granite City—Wedig, J. H. (L.)
Harrisburg—Thompson, H. L. (C.)
Harvard—Seelye, N. L. (L.)
Huntley—Statler, O. I. (L.)
Ipava—Snively, C. D. (L.)
Joliet—O'Neill, J. T. (L.)
Jonesboro—Sanders, K. D. (L.)
Kankakee—Stanger, R. H. (L.)
Marion—Casey, L. L. (L.)
Felts, H. A. (L.)
Mascoutah—Scheve, E. F. (L.)
Mattoon—Nolan, J. F. (L.)
McHenry—Weld, D. G. (L.)
Milford—Gregory, J. H. (C.)
Millstadt—Diesel, G. J. (L.)
Minier—McLaughlin, S. M. (L.)
Monmouth—Kampen, H. I. (L.)
Montrose—Cook, W. (L.)
Mooseheart—Husted, E. G. (L.)
Mount Carmel — McIntosh, J. J. (L.)
Mount Vernon—Hall, A. (C.)
Naperville—Rikli, A. R. (C.)
Normal—Galford, G. H. (L.)
Oak Forest—Funkhouser, T. W. (L.)
Oak Park—Ribbeck, W. A. (C.)
Oneida—Hunter, G. W. (C.)
Ottawa—Roberts, A. J. (C.)
Palmer—Simpson, J. P. (L.)
Paris—Allison, W. F. (L.)
Peoria—Burhans, L. A. (C.)
Hanly, H. H. (L.)
Ives, L. (L.)
Miller, S. M. (C.)
Wiens, D. P. (C.)
Peotone—Howe, J. B. (C.)
Peru—Balensiefer, O. (L.)
Pinckneyville—Mead, D. O. (L.)
Pleasantview—Corman, V. M. (L.)
Quincy—Morgan, F. R. (L.)
Rochelle—Stevens, R. E. (C.)
Rockford—Gill, G. P. (L.)
Rock Island—Lachner, B. J. (C.)
Robb, C. E. (L.)
Rushville—Harvey, W. F. (C.)
Salem—Kell, C. T. (L.)
Sandwich—Dakin, R. G. (L.)
Sheldon—Seever, C. W. (L.)
Springfield—Clark, W. V. (L.)
Penniman, W. L. (C.)
Wilkinson, J. L. (L.)
Zaphriades, S. D. (L.)
St. Anne—Ayling, G. H. (C.)
St. Joseph—Knappenberger, T. G. (L.)
Staunton—Hunter, A. H. (L.)
Steger—Wickensimer, J. B. (L.)
Tampico—Terry, H. A. (L.)
Tiskilwa—Hess, H. R. (C.)
Tuscola—Huber, G. W. (L.)
Victoria—Stewart, R. H. (L.)
Virginia—Blackburn, W. R. (L.)
Waltonville—Wells, J. W. (L.)
Waukegan—Bormann, G. B. (L.)
Claeboe, A. H. (L.)
Weldon—Chapin, C. W. (C.)

INDIANA

Anderson—Brook, E. E. (L.)
Aurora—Marshall, C. C. (L.)
Berne—Schenk, C. H. (L.)
Bloomington—Rogers, R. C. (C.)
Smith, R. D. (C.)
Bridgeton—Bennet, P. R. (L.)
Bringhurst—Carter, E. (L.)
Buck Creek—McCabe, J. C. (L.)
Cicero—King, B. A. (L.)
Claypool—Landis, W. C. (L.)
Colburn—Wagoner, R. H. (L.)
Connersville—Booher, I. E. (L.)
Leffel, S. J. (L.)
Daleville—Tucker, O. A. (C.)
Darlington—Pollon, R. R. (L.)
Decatur—Coverdale, E. G. (C.)
Duggar—Gill, F. J. (L.)
Dunkirk—Heller, N. C. (L.)
East Chicago—Schlicker, A. G. (C.)
Evansville—Baker, C. S. (L.)
Barnes, W. E. (L.)
Fairland—Wells, M. M. (L.)
Fairmount—Aldrich, H. (L.)
Ferdinand—Gugsell, A. F. (C.)
Freeland Park—Hartsock, F. M. (C.)
French Lick—Dillinger, J. R. (C.)
Fort Branch—Stephens, O. C. (L.)
Fort Wayne—Rawles, L. T. (C.)
Gaston—Dunn, J. W. (L.)
Hammond—Bigger, W. M. (C.)
Chevingy, J. J. A. (C.)
Graham, J. A. (C.)
Hardinsburg—Benz, J. (L.)
Hobbs—Morris, T. O. (L.)
Indiana Harbor—Hamilton, R. C. (L.)
Indianapolis—Bull, J. H. (L.)
Cox, H. W. (L.)
Devaney, M. O. (L.)
Hicks, L. C. (L.)
Jones, C. K. (C.)
Kincaid, J. C. (L.)
Kohlstaedt, G. W. (L.)
Light, M. B. (C.)
Magennis, H. L. (L.)
Mayer, F. W. (L.)
McCoy, E. L. (L.)
Neier, O. C. (C.)
Nolting, H. F. (L.)
Robertson, J. R. (C.)
Rogers, C. (C.)
Walker, H. A. (L.)
Jeffersonville—Reed, A. A. (L.)
Kokomo—Meiner, J. A. (L.)
Lafayette—Morgan A. E. (C.)
Pyke, F. E. (L.)
LaGrange—Rozelle, C. C. (L.)
Lawrenceburg—Fagaly, A. T. (C.)
Leavenworth—Deen, H. H. (L.)
Lemar—Medcalf, N. L. (L.)
Linngrove—McKean, T. J. (L.)
Linton—Custer, A. T. (C.)
Thayer, M. N. (C.)
Lyons—Chambers, B. F. (L.)
Manilla—Barnum, E. (L.)
Marion—Priest, F. A. (C.)
Martinsville—Maxwell, F. R. (L.)
Milroy—Houghland, C. S. (C.)
Mount Etna—Wimmer, G. G. (L.)
Muncie—Cole, R. (L.)
Nashville—Turner, J. A. (L.)
New Albany—Baxter, J. W. (C.)
Bird, J. E. (C.)
Briscoe, E. E. (C.)
Wolfe, F. E. (C.)
New Middletown—Smoots, S. A. (L.)
North Terra Haute—Shores, E. M. (C.)
Owensburg—Moore, C. C. (L.)
Oxford—Parker, E. E. (L.)
Peru—Ellers, L. R. (L.)
Petroleum—Morris, G. B. (C.)
Plainfield—Stafford, J. C. (L.)
Portland—Cring, G. V. (L.)
Moran, M. M. (L.)
Nixon, J. E. (L.)
Princeton—Brazelton, O. T. (L.)
Richmond—Duffin, C. E. (C.)
Huffman, W. G. (L.)
Ridgeville—Wallace, J. M. (C.)
Roanoke—Murray, D. E. (L.)
Rochester—Taylor, H. W. (L.)
Salem—Paynter, C. B. (L.)

South Bend—Baker, W. H. (C.)
Barber, A. E. (L.)
Hickman, J. S. (C.)
Miller, H. M. (M.)
Shanklin, R. C. (C.)
South Whitney—Eberhard, F. G. (C.)
Terre Haute—Barbazette, L. F. (L.)
Cook, J. H. (C.)
Hewitt, J. H. (L.)
Hutchings, B. M. (C.)
Ricker, J. W. (L.)
Spigler, O. R. (C.)
Stunkard, T. C. (M.)
Valparaiso—Seipel, H. O. (L.)
Wabash—Sholty, L. O. C. (L.)
Whisler, F. M. (C.)
West Union—McCaskey, G. H. (L.)

IOWA

Algona—Burke, C. H. (L.)
Ames—Rice, E. (C.)
Atkins—Park, P. A. (C.)
Atlantic—Burke, C. B. (C.)
Avoca—Ferguson, S. M. (L.)
Bend—Coe, U. C. (L.)
Bloomfield—Shelton, C. D. (L.)
Bouton—Anderson, P. O. (L.)
Carroll—Freeman, M. J. (L.)
Cedar Falls—Vanderveer, F. L. (C.)
Cedar Rapids—Hasek, V. H. (L.)
Johnston, B. R. (M.)
Ruml, W. (C.)
Vorpahl, R. A. (C.)
Charles City—Seymour, W. H. (C.)
Cherokee—Eaton, R. G. (C.)
Clarksville—Scripture, J. L. (C.)
Clinton—Anderson, M. E. (L.)
Heusinkveld, H. J. (L.)
Keefe, F. M. (L.)
Council Bluffs—Hennessy, A. V. (M.)
Davenport—Cantwell, J. D. (L.)
Harkness, G. F. (C.)
Speers, W. F. (C.)
Decorah—Conrad, A. E. (C.)
Dedham—Bowie, C. C. (L.)
Des Moines—Pearson, W. W. (M.)
Peck, J. H. (M.)
Dubuque—Linehan, L. J. (L.)
Schrup, J. H. (C.)
Garden Grove—Lyon, W. E. (L.)
Gravity—Ambrose, E. C. (L.)
Grinnell—Lauder, C. H. (L.)
Independence—Lindsay, H. A. (C.)
Knoxville—Wright, J. R. (L.)
Lansing—Lytle, C. C. (L.)
Lowden—Charlton, A. J. (L.)
Mable Rock—O'Keefe, C. J. (L.)
Marengo—Manahan, C. A. (L.)
Masonville—Bowman, L. J. (L.)
Maxwell—Trotter, W. M. (C.)
Merrill—Cody, W. E. (L.)
Monona—Renshaw, K. (L.)
Muscatine—Johnston, W. H. (L.)
Newton—Hinshaw, S. E. (C.)
Oelwein—Cole, J. F. (C.)
Risk, H. (L.)
Pella—Aschenbrenner, C. (C.)
Rockport—Weise, H. G. (C.)
Rock Valley—Leonard, E. R. (L.)
Ruthven—Huston, H. M. (L.)
Sibley—Winkler, F. P. (L.)
Sioux City—Kilborne, J. M. (C.)
Magoun, C. E. (L.)
State Center—Pence, E. W. (L.)
Sutherland—Nichols, F. L. (L.)
Wellman—Miller, E. D. (L.)
West Union—Mercer, C. D. (L.)

KANSAS

Arkansas City—Clayton, E. H. (C.)
Atchison—Ferguson, C. S. (C.)
McKeehan, L. P. (L.)
Blue Mound—Barnes, H. M. (L.)
Clay Center—Speer, W. L. (L.)
Easton—Adams, A. R. (L.)
Ellis—Blake, C. D. (C.)
Ellsworth—Downs, J. M. (M.)
Mayer, B. H. (L.)
Eureka—Garrison, G. B. (L.)
Fort Scott—Lardner, J. C. (C.)
Fort Worth—Terry, H. H. (L.)
Fredonia—Young, W. H. (L.)
Garden City—Bailey, S. (L.)
Garnett—Turner, A. J. (L.)
Greenburg—Miller, R. H. (L.)
Haddam—Swab, C. M. (L.)
Hesston—Wedel, A. J. (L.)
Horton—Harker, H. J. (C.)
Iola—Cox, O. L. (C.)
Reid, J. T. (C.)
Kansas City—Barney, L. F. (C.)
Gray, G. M. (M.)
Smith, J. E. (L.)
Spake, L. B. (C.)
Lawrence—Smith, L. A. (L.)
Lebo—Mills, C. J. (L.)
McCune—Chapin, C. (L.)
McPherson—Hall, M. (L.)
Mineral—Lightfoot, E. C. (L.)
Mount Hope—Hunsberger, H. G. (C.)
Muscotah—Barkers, O. O. (L.)
Newton—Kalbfleisch, E. L. (L.)
Osawatomie—Carmichael, F. A. (C.)
Perry—Weisgerber, A. L. (C.)
Pittsburg—Hartman, W. V. (L.)
Pratt—Hockaday, J. A., Jr. (L.)
Reading—Settle, J. A. (C.)
Scandia—Hagaman, C. V. (C.)
St. George—Fry, C. S. (L.)
Wakarusa—Wyatt, C. A. (L.)
Wichita—Ebright, E. D. (C.)

KENTUCKY

Adairville—Russell, J. L. (L.)
Ashland—Salmon, J. M. (C.)
Benton—Eddleman, O. A. (L.)
Berea—Lichtwardt, H. A. (L.)
Bowling Green—Blackerby, P. E. (C.)
Caney—Wheeler, J. C. (L.)
Central City—Woodburn, C. (L.)
Christianburg—Smith, J. N. (L.)
Clinton—Peebles, W. (L.)
Columbia—Miller, O. P. (L.)
Covington—Caldwell, A. G. (L.)
White, H. C. (C.)
Danville—Jackson, J. D. (C.)
Dawson Springs—Nichols, L. E. (L.)
Dayton—Struble, C. H. (C.)
Edgoten—Rollow, S. J. (C.)
Eminence—Bell, M. (C.)
Holt, J. Ed. (L.)
Falmouth—McKinney, W. A. (L.)
Wallace, L. G. (C.)
Ford—Pennington, J. F. (L.)
Georgetown—Johnson, H. V. (L.)
Greenville—Slaton, H. Y. (L.)
Hellier—Preston, J. C. (L.)
Hopkinsville—Bell, A. (C.)
Miller, O. F. (L.)
Horse Cave—Edwards, F. (L.)
Irvine—Edwards, E. E. (L.)
Kuttawa—Phillips, T. L. (L.)
Lakeland—Davidson, A. J. (L.)
Leesburg—Blount, H. C. (L.)
Lexington—Vance, C. A. (C.)
Willis, J. E. H. (L.)
London—Brock, G. S. (C.)
Louisville—Anderson, R. T. (C.)
Beck, J. M. (L.)
Clem, J. L. (L.)
Emrich, W. H. (L.)
Kerns, I. N. (L.)
Mathewsian, M. H. (L.)
Myer, S. P. (C.)
Nichols, C. L. (L.)
Pirkey, E. L. (L.)
Pottinger, S. L. (C.)
Stanley, S. E. (L.)
Madisonville—Strother, F. P. (C.)
McDaniels—Tuttle, J. R. (L.)
Moorefield—Kash, C. W. (L.)
Mount Sterling—Demaree, O. B. (C.)
Newport—Batte, J. T. (L.)
Oscar—Usher, H. V. (L.)
Paducah—Hearne, R. E. (C.)
Jaris—Swetnam, E. (L.)
Penick—Putnam, J. L. (L.)
Port Royal—Chapman, O. P. (L.)
Ravenna—Snowden, R. (L.)
Red House—Phelps, R. M. (L.)
Rome—Barr, E. (L.)
Russellville—Byrne, W., Jr. (C.)
Sandy Hook—Hunter, C. R. (L.)
Shawhan—Anderson, H. B. (L.)
Shelbyville—Smith, E. B. (C.)
Slaughters—Whitson, J. H. (L.)
Smithfield—Hancock, C. L. (L.)
Springfield—Hyatt, M. W. (C.)
Tolu—Lowery, O. T. (L.)
Valley Station—Foss, S. S. (C.)
Warsaw—Duvall, C. H. (L.)
Wickliffe—Williams, A. J. (L.)
Wilmore—McLean, H. L. (C.)
Winchester—Lyon, H. (L.)
Wingo—Mullins, S. (L.)

LOUISIANA

Alexandria—Holloman, L. W. (L.)
Oglesby, J. M. (L.)
Angie—McNeese, W. T. (L.)
Boyce—Phillips, J. W. (L.)
Bunkie—Davis, D. B. (C.)
Converse—Paul, B. I. (L.)
Effie—Lafargue, L. D. (L.)
Eros—Ewing, J. L. (L.)
Evergreen—Buck, W. P., Jr. (L.)
Franklin—Kappel, A. C. (L.)
Girard—Chambers, H. C. (L.)
Grangeville—Tyler, L. T. (L.)
Harvey—Hirsch, J. G. (L.)
Lafayette—Clark, L. O. (C.)
Lake Charles—Iles, D. C. (C.)
Lecompte—Lett, F. M. (C.)
Merryville—Windham, R. E. (C.)
Minden—Martin, S. F. (L.)
Tompkins, R. C. (C.)
New Orleans—Bacon, E. F. (C.)
Balsinger, W. E. (C.)
Bath, J. (L.)
Bell, T. P. (L.)
Blackshear, S. M. (L.)
Bloch, E. (L.)
Bordenave, C. J. (L.)
Burgheim, C. A. (C.)
Hyman, D. (L.)
Keitz, E. S. (L.)
May, C. P. (L.)
Miller, C. R. (L.)
Nix, J. T. (L.)
Salerno, E. F. (L.)
Taquino, G. J. (L.)
Powhatan—Perot, P. L. (L.)
Shreveport—Erickson, C. B. (L.)
Furman, F. S. (M.)
Taylortown—Simpson, E. E. (L.)
Thibodaux—Kleinpeter, E. A. (L.)
Winnfield—Peters, A. M. (L.)

MAINE

Bangor—Cox, J. F. (L.)
Bucksport—Tweedie, H. V. (C.)
Camden—Hutchins, J. G. (L.)
Deer Isle—Clark, R. W. (L.)
Lathrop—Longfield, F. J. (C.)
Lewiston—McKeepace, T. E. (L.)
Norway—Bradbury, B. F. (C.)
Portland—Bickmore, H. V. (L.)
Dennett, C. G. (L.)
Solon—Piper, J. O. (L.)
Waterford—Chipman, A. J. (L.)
Westbrook—Hills, L. L. (C.)

MARYLAND

Baltimore—Banks, M. H. (L.)
Bay, R. P. (M.)
Callander, C. E. (L.)
Chambers, T. R. (M.)
Clark, S. E. (L.)
Cole, J. W. (C.)
Davis, J. S. (C.)
Dickson, I. C. (L.)
Ebe, R. W. (L.)
Lentz, C. S. (L.)
Lloyd, O. S. (L.)
Nicholson, F. P. (L.)
Raemore, M. L. (L.)
Shamer, M. E. (L.)
Skladowsky, J. A. (L.)
Spencer, L. C. (C.)
Stansbury, H. H. (L.)
Wantz, S. R. (L.)
Waters, C. A. (L.)
Weisman, P. G. (L.)
Whittle, W. O. (L.)
Cumberland—Fox, C. (L.)
Wilson, J. H. (L.)
Easton—Hammond, W. T. (L.)
Govans—Baldwin, J. C. (L.)
Havre de Grace—Bay, J. H. (L.)
Johnson, J. T. (L.)
Peru—Wagner, M. L. (L.)
Roland Park—Willock, J. S. (C.)
Ruxton—Carswell, W. S. (L.)
Salisbury—Elderdice, J. M. (C.)
Miller, F. A. (L.)

MASSACHUSETTS

Abington—Stevens, W. R. (L.)
Allston—Wallace, H. L. (L.)
Baldwinsville—Rohr, W. F. (L.)
Belmont—Small, E. W. (L.)
Bernardston—Hodskins, E. B. (C.)
Beverly—Lawlor, J. F. (L.)
Boston—Bancroft, W. W. (M.)
Brown, P. (M.)
Clark, J. D. (C.)
Connolly, W. E. (L.)
Crosbie, A. H. (M.)
Dana, H. W. (M.)
Darling, C. B. (C.)
Draper, F. E. (C.)
Goethals, T. R. (L.)
Holland, H. T. (C.)
King, J. (C.)
Lancaster, W. B. (L.)
Lovett, R. W. (M.)
Luce, L. A. (C.)
May, J. S. (C.)
McVey, F. J. (L.)
Medalia, L. S. (M.)
Mollica, Z. A. (L.)
Monahan, E. J. (L.)
Morrison, L. H. (C.)
Poirier, G. H. (L.)
Sadler, R. A. (L.)
Scanlan, T. J. (C.)
Seymour, M. (C.)
Spaulding, J. D. (L.)
Taylor, J. D. (L.)
Vamvas, A. D. (L.)
Watts, H. F. R. (C.)
Boston—Webster, F. A. (C.)
Wheeldon, T. F. (L.)
Brookline—Bonelli, R. P. (L.)
Saeger, E. T. (L.)
Cambridge—Cahill, T. J. (L.)
Connor, G. A. (C.)
Chicopee—Agnew, J. R. (L.)
Clinton—Goodwin, J. J. (M.)
Cohasset—Hinchliffe, F. (L.)
Danvers—Mains, H. L. (L.)
East Boston—Liberti, A. (L.)
East Cambridge—Young, W. B. (L.)
Fall River—Learned, E. T. (L.)
Sullivan, A. J. (L.)
Fitchburg—Donovan, T. R. (L.)
Franklin—Hussey, C. B. (C.)
Glocester—Voss, J. W. (C.)
Graniteville—Sherman, W. H. (L.)
Great Barrington—Cavanaugh, M. T. (C.)
Hatfield—Bonneville, A. J. (C.)
Haverhill—Garbelnick, D. A. (L.)
McLaughlin, A. O. (L.)
Stone, T. N. (L.)
Haydenville—Perry, C. E. (C.)
Holbrook—Crawford, F. W. (L.)
Holyoke—Allen, F. H. (C.)
Brindamour, J. E. (C.)
Laczynski, F. S. (L.)
Robert, G. C. (C.)
Wetherell, B. D. (L.)
Lancaster—Bartol, E. F. W. (L.)
Lawrende—Dearborn, H. F. (C.)
O'Reilly, F. A. (L.)
Lynn—Hyde, H. V. (L.)
Medford—Cassidy, F. C. (L.)
Haley, P. J. D. (L.)
Melrose—Pike, F. F. (M.)
Milford—Lally, M. A. (L.)
Mill River—Sellew, R. C. (L.)
Milton—Rowe, C. A. (L.)
New Bedford—Shanks, C. (L.)
Young, E. W. (L.)
Newburyport—Jewitt, A. J. (L.)
Newtonville—Clark, R. R. (C.)
Northampton—Dow, F. E. (C.)
North Attelboro—Teller, J. E. (L.)
North Brookfield—Prouty, A. H. (C.)
Norwood—Kaufman, M. F. (L.)
Peabody—Pomeroy, H. S. (L.)
Pittsfield—Bard, H. H. (L.)
Hannon, P. F. (L.)
Johnson, K. (L.)
Quincy—Cook, J. H. (L.)
Randolph—Higgins, G. V. (L.)
Myrick, A. W. (L.)
Salem—Atkinson, C. (L.)
Scituate—Cleverly, H. F. (L.)
Somerville—Dailey, E. J. (C.)
Pote, L. H. (L.)
Shaw, F. (L.)
Springfield—Bennett, R. S. (C.)
LaRochelle, A. H. (L.)
Schadt, G. L. (C.)
Street, C. E. (C.)
Tewksbury—Quennell, W. L. (L.)
Uxbridge—Aldrich, J. T. (L.)
Vineyard Haven—Meyhew, O. S. (L.)
Waltham—Dascombe, O. L. (L.)
Webster—Sullivan, J. C. (L.)
Wellesley Hills—Proctor, G. C. (L.)
Westboro—Mahoney, W. F. (L.)
West Boylston—Trask, H. W. (L.)
Westfield—Marr, R. M. (L.)
West Somerville—Ruston, W. D. (L.)
West Springfield—Steele, G. L. (L.)
Wilmington—Buck, W. E. (L.)
Winchendon—Cross, L. K. (L.)
Kenney, C. B. (L.)
Winchester—Robb, H. (M.)
Sheely, R. W. (L.)
Woburn—Cahill, J. (L.)
Wollaston—Curtis, W. G. (C.)
Merritt, R. E. (L.)
Worcester—Baff, M. (L.)
McGillicuddy, J. T. (C.)
Puskunis, J. (L.)
Wrentham—Proctor, T. M. (L.)

MICHIGAN

Adrian—Miller, R. F. (L.)
Ann Arbor—Canfield, R. B. (M.)
Auburn—Ballard, S. L. (L.)
Bay City—Dumond, V. H. (L.)
Lawrence, H. P. (L.)
Benton Harbor—Burrell, H. J. (C.)
Stevenson, B. L. (L.)
Carson City—Hargrove, D. V. (C.)
Cobleville—Westcott, L. E. (L.)
Colon—Doran, W. E. (C.)
Crystal Falls—Haight, A. L. (L.)
Custer—Duguid, L. H. (L.)

Detroit—Adams, D. C. (L.)
Baesluck, F. W. (M.)
Benjamin, W. O. (L.)
Burnham, F. V. (L.)
Burt, R. C. (L.)
Closz, H. F. (L.)
Courie, W. F. (L.)
Crow, S. C. (C.)
Delbridge, J. J. (C.)
Gottschalk, F. W. (L.)
Hardy, G. C. (L.)
Kruger, D. R. (L.)
Lange, A. H. (L.)
MacKnight, R. S. (L.)
Mallory, N. A. (L.)
Maunders, J. E. (C.)
Milligan, F. L. (L.)
Morris, I. S. (C.)
Parker, B. D. (C.)
Rupp, J. R. (L.)
Schaller, G. J. (C.)
Slevin, J. H. (C.)
Timme, A. R. (L.)
Weingarden, D. (L.)
Dowagiac—Herkimer, G. R. (C.)
East Detroit—Sanderson, A. R. (L.)
Evart—Conover, W. J. (L.)
Flint—Reeder, F. E. (L.)
Reynolds, A. J. (C.)
Fort Wayne—Brown, R. D. (L.)
Gaylord—Knapp, H. W. (C.)
Grand Blanc—Reid, W. C. (L.)
Grand Haven—Long, C. E. (L.)
Grand Ledge—Schilz, E. A. (L.)
Grand Rapids—Hunderman, E. D. (L.)
Lamb, G. F. (L.)
Lyman, W. D. (M.)
Hancock—Power, L. M. (L.)
Hillsdale—Martindale, E. A. (L.)
Holland—Leenhout, A. (C.)
Iron Mountain—Cruse, S. E. (M.)
Jackson—Seybold, G. A. (C.)
Kalamazoo—Sears, A. M. (L.)
Kearsarge—Oler, V. L. (L.)
Lake City—Abbott, N. (L.)
Lansing—Bellinger, E. G. (L.)
Drolett, A. J. (L.)
Galbraith, D. A. (L.)
Lennon—Conley, L. A. (L.)
Manistee—Lewis, L. A. (L.)
McKay, A. A. (C.)
Marquette—Youngquist, L. L. (L.)
Muskegon—Hannum, F. W. (L.)
Navarre—Benjamin, C. C. (L.)
Petersburg—Meck, H. L. (L.)
Pittsford—Alleger, W. E. (L.)
Plymouth—Kimble, J. H. (L.)
Pontiac—Orton, E. (C.)
Port Huron—Bowden, L. (C.)
Saginaw—Friedlaender, B. (M.)
Scottville—Hunt, L. L. (L.)
St. Joseph—Allen, R. C. (L.),

MINNESOTA

Beardsley—Weir, J. D. (C.)
Breckenridge—Miller, J. L. (C.)
Cass Lake—Fraker, S. R. (L.)
Chatfield—Woodruff, S. W. (L.)
Duluth—Cosgrove, J. H. (L.)
Eveleth—Rawlings, H. F. (L.)
Fairbault—Haessly, S. B. (C.)
Warren, F. S. (C.)
Graceville—Oliver, C. I. (C.)
Granite Falls—Levy, M. (L.)
Kiester—Urstadt, O. H. (C.)
Lamberton—Walker, C. C. (C.)
Litchfield—Danielson, K. A. (L.)
Long Prairie—Parrott, B. W. (C.)
Minneapolis—Booth, A. E. (C.)
Fleming, A. S. (C.)
Hamel, A. L. (L.)
Hoyde, R. (L.)
Kieck, E. G. (L.)
Martin, H. M. (M.)
McKinney, S. S. (L.)
Melcek, H. N. (L.)
O'Donnell, J. E. (L.)
Smith, N. M. (L.)
Taft, W. L. (L.)
Moorhead—Verne, V. E. (C.)
Nopeming—Conroy, J. M. (C.)
Owatonna—Morehouse, G. G. (L.)
Rochester—Hoke, C. C. (L.)
South Minneapolis—Schmitt, S. C. (C.)
St. Cloud—McDowell, J. P. (L.)
St. Paul—Bosworth, R. (L.)
Lerche, W. (C.)
Pearson, F. R. (L.)
Perry, C. G. (L.)
Rothschild, H. J. (L.)
Vonder Weyer, W. H. (L.)
Stewartville—Fawcett, C. E. (C.)
Virginia—Empie, W. M. (L.)
Wilmont—Williams, A. B. (C.)
Winona—Tweedy, G. J. (C.)

MISSISSIPPI

Arm—Armstrong, M. C. (L.)
Artesia—Lehmberg, E. (L.)
Belen—Furr, J. E. (L.)
Belzoni—Jackson, J. S. (C.)
Brookhaven—McLeod, N. A. (C.)
Brooklyn—Young, R. N. S. (L.)
Caseyville—Magee, D. W. (L.)
Clarksdale—Primrose, J. W. (L.)
Columbus—Davis, J. E. (C.)
Greenville—Hirsch, J. B. (L.)
Harkville—Mitchell, C. B. (L.)
Harperville—Austin, O. O. (L.)
Hattiesburg—Hightower, C. C. (L.)
Hudson, L. B. (L.)
McKinnon, H. L. (C.)
Highpoint—Kemp, E. D. (L.)
Hudsonville—England, J. F. (L.)
Issaquena—Pool, W. C. (L.)
Jackson—Crisler, J. (C.)
Dobson, W. B. (M.)
Kosciusko—Rouse, E. C. (L.)
Lena—Russell, P. B. (L.)
Louin—Montgomery, G. W. (C.)
Magee—Posey, E. L. (L.)
Magnolia—Moore, J. S. (L.)
McComb—Brock, D. T. (L.)
Meridian—Bailey, J. T. (L.)
Flake, H. (C.)
Royals, T. E. (L.)
Tackett, J. R. (C.)
Merigold—Wiggins, J. P. (L.)
Moselle—Butler, J. C. (L.)
Natchez—Dennis, M. (C.)
New Albany—Newton, W. L. (L.)
Picayune—Woodward, J. I. (L.)
Poplarville—Buckley, J. C. (L.)
Prentiss—Magee, J. B. (C.)
Sandersville—Copeland, W. D. (L.)
Sumrall—Bryan, A. C. (L.)
Gaddy, S. J. (L.)
Whynot—Phillips, T. E. (L.)
Wiggins—Ford, F., Jr. (C.)
Winona—Baskerville, G. (M.)

MISSOURI

Advance—Moore, C. (C.)
Aullville—Aber, W. H. (L.)
Ava—Ferguson, J. D. (L.)
Bethel—Smith, L. L. (L.)
Bevier—Brewington, G. F. (L.)
Christie, J. D. (L.)
Gronoway, T. P. (L.)
Bonne Terre—Monroe, L. E. (L.)
Breckenridge—Meredity, O. O. (L.)
Brookfield—Ferguson, L. J. (C.)
McLarney, J. T. (L.)
Browninig—Ingram, W. C. (L.)
Campbell—Hammersley, G. O. (C.)
Carthage—Powers, E. (C.)
Clearmont—Dowell, H. S. (C.)
Corder—Carthrae, L., Jr. (C.)
Craig—Ottman, J. C. (L.)
Elsberry—Keeling, F. V. (L.)
Excelsior Springs—Baird, J. E. I. (C.)
McCulloch, G. A. (C.)
Flat River—Cecil, G. E. (C.)
Fulton—Owen, H. I. (L.)
Graham—Morgan, E. L. (C.)
Granby—Bowers, J. S. (L.)
Hannibal—Cooper, J. F. (C.)
Harrisonville—Crawford, H. S. (C.)
Joplin—James, R. M. (C.)
Leaming, H. A. (C.)
Kahoka—Bridges, J. R. (C.)
Kansas City—Butler, O. W. (C.)
Castles, J. E. (L.)
Davis, H. D. (C.)
Gammage, T. R. (L.)
Jones, A. E. (L.)
Major, R. H. (C.)
Miller, L. B. (L.)
Montgomery, J. G. (L.)
Ray, J. (L.)
Roberts, S. E. (C.)
Sharon, F. F. (L.)
Smith, D. O. (M.)
Van Eman, F. T. (C.)
Kirksville—Bigsby, F. L. (C.)
Dodson, J. F. (C.)
Leadwood—Appleberry, R. (C.)
Le Monte—Mitchell, E. (L.)
Linn Creek—Moulder, J. D. (L.)
Marionville—O'Dell, T. T. (C.)
Marshall—Powers, H. C. (C.)
Marshfield—Bruce, J. R. (L.)
Moberly—Megee, O. K. (L.)
Mount Vernon—Fulton, W. L. (C.)
Newark—Pierce, D. (L.)
New Haven—Mankopf, B. E. (C.)
Olean—Spalding, L. M. (L.)
Osborn—Shafer, F. M. (L.)
Palo—Mount, R. L. (C.)
Prairie Home—Meredith, A. L. (L.)
Princeton—Stacy, E. W. (C.)
Qulin—Cook, S. (L.)
Rolla—Horrom, G. W. (L.)
Rushville—Gardner, E. L. (L.)
Sedalia—Barnum, K. R. (L.)
Walker, E. R. (C.)
Springfield—Fulbright, J. H. (C.)
James, J. D. (C.)
Tucker, C. A. (L.)
St. Joseph—Leonard, P. I. (C.)
Witten, H. O. (C.)
St. Louis—Ambrose, O. A. (C.)
Aufderheide, W. D. (C.)
Brown, J. V. (M.)
Bryan, R. S. (M.)
Burford, C. E. (M.)
Burns, S. S. (C.)
Carley, H. D. (C.)
Cook, J. T. (L.)
Davis, F. L. (L.)
Dierkes, G. J. (L.)
Dyer, C. P. (L.)
Halley, C. D. (C.)
Hartman, J. C. (C.)
Hertel, A. L. (L.)
Koenig, O. M. (L.)
Konzelman, J. A. (L.)
May, B. F. (L.)
McCornack, C. C. (L.)
Moersbel, H. G. (L.)
Muller, C. O. (I.)
Niedringhaus, R. E. (C.)
Opie, E. L. (L. C.)
Raines, C. (C.)
Randle, H. T. (L.)
Sauer, W. E. (C.)
Schmidt, I. H. (C.)
Schwartz, F. O. (L.)
Sharpe, N. W. (C.)
Sparhawk, W. J. (L.)
Stewart, S. S. (L.)
Tate, B. F. (C.)
Weygandt, S. S. (L.)
Stella—Edmondson, J. L. (L.)
Vichy—Jones, R. E. (L.)
West Line—Bokhof, D. H. (C.)
West Plains—Thornburgh, A. H. (M.)
Williamsville—Torn, J. L. (L.)
Winston—Coats, C. C. (L.)

MONTANA

Butte—Biddle, G. (L.)
Gleason, M. H. (L.)
Smith, L. W. (L.)
Forsyth—Holmes, H. S. (L.)
Great Falls—Bice, C. W. (L.)
Longeway, A. F. (C.)
Helena—Sweet, E. A. (C.)
Thompson, J. G. (C.)
Hobson—Estabrook, W. E. (L.)
Livingston—Leard, S. E. (L.)
Windsor, G. L. (L.)
Logan—Whitehead. C. E. (L.)
Warm Springs—Scanland, J. M. (C.)

NEBRASKA

Aldy—Pitts, S. O. (L.)
Beaver City—Copeland, C. C. (C.)
Belvidere—Kelly, W. E. (L.)
Lahners, T., Jr. (L.)
Bloomfield—Mettlen, J. H. (C.)
Bostwick—Pinkerton, W. J. (C.)
Carroll—Phillips, W. H. (L.)
Columbus—Morrow, F. H. (C.)
Dwight—Srb, J. J. (L.)
Fairbury—Taylor, J. S. (C.)
Franklin—Smith, H. C. (C.)
Fremont—Van Metre, R. T. (C.)
Genoa—Davis, H. (M.)
Grand Island—Boyden, H. B. (L.)
Hastings—Bore, A. J. (L.)
Hebron—Platt, R. L. (L.)
Hooper—Heine, W. H. (C.)
Lincoln—Des Jardien, G. A. (L.)
Smith, R. L. (L.)
Malmo—Scudder, R. (C.)
Neligh—Clements, S. C. (M.)
Niobrara—Sissakian, A. H. (L.)
North Bend—Doane, W. E. (L.)
Oakdale—Earle, G. W. (C.)
Omaha—Eggers, H. E. (M.)
Holst, J., Jr. (C.)
Prince, A. C. (C.)
Sumney, H. C. (C.)
Ponca—Young, G. A. (C.)
Schuyler—Kolouch, F. G. (L.)
Scottsbluff—Riehn, F. W. (L.)
St. Edwards—Jones, T. J. (C.)
Walthiel—Limburg, J. I. (L.)
Wausa—Lake, L. B. (L.)
Neumann, E. V. (L.)
Winside—Simon, V. S. (L.)
York—Bell, J. S. (L.)

NEVADA

East Ely—Bowdle, R. A. (L.)
Rochester—Wilson, J. B. (L.)
Stewart—Morrow, W. B. (L.)

NEW HAMPSHIRE

Concord—Sullivan, D. E. (C.)
Conway—Wiggin, C. M. (L.)
Keene—Wright, W. L. (L.)
Lancaster—Carpenter, H. B. (C.)
Littleton—Cameron, E. A. (L.)
Manchester—Minville, E. D. (L.)
Towle, M. H. (L.)
Meredith—Darling, I. A. (L.)
Milford—Lovejoy, F. H. (L.)
Milton Mills—Anderson, H. E. (L.)
Nashua—Daudelin, A. (L.)
North Conway—Snow, S. D. (L.)
Portsmouth—Kittredge, P. J. (L.)
Troy—Platts, H. S. (L.)
West Concord—Quinn, C. H. (C.)
Wolfeboro—Cotton, C. B. (C.)
Woodsville—Spear, F. E. (L.)

NEW JERSEY

Arlington—Rieck, W. R. (L.)
Atlantic City—Bossert, C. L. (C.)
Senseman, T. (C.)
Atlantic Highlands—Failing, B. E. (M.)
Bridgeton—Corson, E. S. (C.)
Sheppard, A. G. (C.)
Butler—Coates, G. C. (C.)
Carteret—Reason, J. J. (L.)
Dunellen—Longbothum, G. T. (L.)
Elizabeth—Buck, A. O. (C.)
Marone, C. R. (L.)
Hackensack—Denig, R. D. (L.)
Hoboken—Broesser, H. V. (M.)
Irvington—Mieran, E. W. (L.)
Jersey City—De Fuccio, C. P. (L.)
Little, A. W. (L.)
MacMurrough, F. P. K. (C.)
Purdy, C. H. (C.)
Riordan, T. J. O. (L.)
Rowe, N. L., Jr. (L.)
Thomas, R. B. (L.)
Wechsler, J. (L.)
Merchantville—Donoho, A. P. (L.)
Millville—Mayhew, C. H. (L.)
Montclair—Synnott, M. J. (M.)
Morristown—Johnson, G. L. (L.)
Lawless, N. W. (L.)
Mount Vernon—McCormich, W. E. (L.)
Newark—Boyle, T. P. (C.)
Cohn, R. M. (L.)
Dutton, V. W. (L.)
Foster, W. S. (C.)
Ill, E. A. (L.)
O'Neill, C. L. (L.)
Rapoport, E. (L.)
Roberts, F. A. (C.)
Sherman, E. S. (L.)
Van Ness, H. R. (L.)
Wegman, M. (L.)
Orange—Adams, J. B. (L.)
Levine, J. A. (L.)
Tymeson, W. R. (L.)
Wakeley, W. E. (L.)
Webb, H. D. (C.)
Passaic—Lobsenz, P. (L.)
Paterson—Brancato, P. (L.)
Briody, H. E. (L.)
Hess, H. B. (L.)
Kane, C. J. (L.)
Keating, A. C. (C.)
Mazzarella, C. (L.)
Ward, A. H. (C.)
Penns Grove—Fairchild, S. R. (L.)
Perth Amboy—Lund, J. L. (C.)
Pleasantville—Hudson, W. J. (L.)
Princeton—Vanneman, J. S. (L.)
Red Bank—Rullman, W. A. (L.)
Ridgefield Park—Duffy, J. E. (L.)
Futherford—Cottrell, W. (L.)
Sparta—Jacob, A. N. (C.)
Spring Lake—Savannah, J. G. (L.)
Tenafly—McDannald, W. S. (L.)
Trenton—Baldauf, H., Jr. (L.)
Kackdoorian, V. (L.)
Sesta, J. A. (L.)
Upper Montclair—McRae, A. J. (L.)
Vineland—Hatch, L. F. (C.)
West Hoboken—Stein, J. M. (L.)
West New York—Buckmaster, C. G. (L.)
Wildwood—Tomlin, H. H. (L.)
Williamstown—Black, E. S. (L.)

NEW MEXICO

Albuquerque—Elder, J. W. (C.)
Jameson, C. H. (C.)
Kirkwood, R. C. (M.)
Milford, E. S. (L.)
Buchanan—Harber, H. P. (L.)
Dulce—Wyckoff, C. L. (L.)
Roswell—Kinsinger, J. W. (C.)
Santa Rosa—Craig, S. S. (C.)
Silver City—Bullock, E. S. (M.)
Duncan, E. A. (M.)
Hooper, E. W. (C.)

NEW YORK

Albany—Aronowitz, M. (L.)
Bowers, J. H. (L.)
Cochrane, H. D. (M.)
Cox, F. J. (M.)
Mullens, C. E. (C.)
O'Brien, J. P. (M.)
Vogel, H. A. (L.)
Alexandria Bay—Hartman, L. J. (C.)
Amsterdam—Knapp, R. J. (L.)
Auburn—Seccomb, M. L. (C.)
Bergen—Andrews, R. M. (L.)
Binghamton—Kenyon, H. M. (L.)
Blackwell's Island—Bechtell, R. H. (L.)
Bovina Center—Whitcomb, N. B. (L.)
Bronxville—Wilson, M. C. (C.)
Brooklyn—Beinfield, H. H. (L.)
Bernstein, J. E. (L.)
Bregman, P. E. (L.)
Cosgrove, J. E. (C.)
Costello, F. V. (C.)
Danzar, S. (L.)
Delatour, H. B. (M.)
Field, M. C. (C.)
Frank, S. (C.)
Hargitt, C. A. (L.)
Hergert, E. L. (L.)
Jarrett, A. R. (C.)
Lehrich, W. (L.)
Livingston, W. H. (L.)
Livingstone, D. (L.)
Mochle, W. (L.)
Mondini, C. (L.)
Neuss, W. (C.)
Newman, B. (L.)
Place, E. C. (L.)
Rabbiner, B. (L.)
Reid, M., Jr. (L.)
Shapiro, S. (L.)
Shay, J. J. (L.)
Smith, C. G. (L.)
Smith, J. H. (L.)
Weihna, R. C. (L.)
Welch, D. E. (L.)
Zimtbaum, L. (L.)
Buffalo—Barone, C. J. (L.)
Barone, G. C. M. (L.)
Barr, J. P. (C.)
Bixby, B. J. (C.)
Callahan, A. C. (L.)
Candee, P. J. (C.)
Carr, C. J. (C.)
Clark, A. H. (L.)
Connors, T. W. (C.)
Flannery, J. M. (L.)
Harrison, W. B. (L.)
Heller, J. (L.)
Hoehman, H. D. (L.)
Kiefer, J. N. (L.)
Kujawa, F. M. (L.)
Laport, R. G. (L.)
Linklater, E. R. (L.)
Ludwig, H. J. (L.)
Lynch, W. S. (L.)
McKee, O. S. (L.)
McMahon, M. J. (L.)
Meister, E. F. (L.)
Palmer, A. W. (L.)
Palmer, F. H. (L.)
Reinstein, V. (L.)
Willard, F. B. (C.)
Zingsheim, F. (C.)
Campbell—Sellack, S. Z. (L.)
Canandaigua—Allen, R. V. (C.)
Brooks, C. V. (C.)
Canastota—Barton, S. T. (C.)
Canisteo—Whiting, G. L. (C.)
Cape Vincent—Bentley, N. P. (C.)
Corning—Gregorius, R. F. (L.)
Starr, F. H. (C.)
Cortland—Higgins, R. P. (L.)
McGraw, W. H. (C.)
Dolgeville—Barney, F. M. (C.)
Downsville—Brittain, R. (L.)
East Durham—Persons, R. E. (L.)
East Rochester—Potter, H. C. (C.)
Fort Slocum—Hamilton, S. T. (L.)
Geneva—Brewer, I. W. (L.)
Collie, J. J. (C.)
Gorham—Williamson, C. C. (L.)
Greenport—Smith, E. W. (L.)
Hancock—Cheson, J. E. (L.)
Hartsdale—Tilden, W. C. (C.)
Herkimer—Canfield, J. E. (C.)
Graves, J. W. (L.)
Holland—Mann, H. C. (L.)
Hollis—Marshall, D. T. (C.)
Hoosic—Clark, W. L. (L.)
Hoosic Falls—McGrath, T. A. (L.)
Hornell—Barney, B. A. (C.)
Place, M. A. (L.)
Jamestown—Fess, R. C. (L.)
Johnson, M. J. (L.)
Johnson City—Farrell, W. J. (L.)
Kinderhook—Garnsey, N. D. (L.)
Kingston—Chandler, G. F. (C.)
Larkin, J. F. (L.)
Stelle, L. K. (L.)
La Fargeville—Foakes, J. T., Jr. (L.)
Tinkess, A. L. (C.)
Livonia—Wicker, F. A. (C.)
Lockport—Wheeler, L. H. (L.)
Long Island City—Anderson, A. J. (L.)
Combs, A. C. (L.)
Howard, J. G. (C.)
Lowville—Bassett, H. A. (L.)
Lyons—Simpson, R. S. (C.)
Manlius—Curtiss, C. E. (L.)
Middlesex—Chaffee, F. M. (L.)
Middletown—Schmitz, W. A. (L.)
Middleville—Crofts, J. L. (L.)
Mottville—Gregg, M. E. (L.)
Mount Morris—Bowen, F. J. (C.)
Newburgh—Thompson, E. C. (C.)
New Rochelle—Moore, A. H. (C.)
New York—Altman, S. (L.)
Anesh, A. (L.)
Arena, J. (L.)
Bell, W. W. (L.)
Bier, J. (L.)
Bostwick, W. W. (C.)
Brewer, G. E. (Col.)
Brooks, A. (L.)
Brunor, E. (C.)
Burstein, M. J. (C.)
Butterfield, P. M. (L.)
Cahill, G. F. (C.)
Chamberlain, W. C. (C.)
Cocks, G. H. (M.)
Coerr, F. H. (C.)
Cott, D. N. (L.)
Davis, E. (L.)
Dellett, A. P. (L.)
Dochez, A. R. (M.)
Douherty, J. M. (L.)
Dowd, C. N. (M.)
Eckardt, E. C. (L.)
Eckert, I. (L.)
Eisenbud, A. (L.)
Ernest, R. B., Jr. (L.)
Fagan, P. J. (L.)
Fitzgerald, J. P. (L.)
Fitzpatrick, C. B. (C.)
Flexner, S. (L. C.)
Foster, J. B. (L.)
Frankfeldt, F. M. (L.)
Fraser, J. F. (M.)
Frey, D. I. (L.)
Fuller, J. R. (L.)
Gates, F. L. (L.)
Gushee, E. S. (C.)
Hall, J. M. (L.)
Hall, J. S. K. (C.)
Hamlen, G. D. (M.)
Hammond, F. P. (C.)
Hannon, F. P. (L.)
Higgins, G. T. (C.)
Hirsch, I. S. (C.)
Hoguet, J. P. (C.)
Hollenbeck, L. L. (L.)
Holt, R. F. (C.)
Hood, R. B. (L.)
Howell, C. H. (C.)
Ingels, A. B. (L.)
Iovine, M. V. (L.)
Jenkins, P. S. (L.)
Kennedy, B. S. (L.)
Komaroff, H. M. (L.)
Korn, P. (L.)
Kraetzer, A. F. (L.)
Levy, A. B. (L.)
Levy, E. C. (M.)
Long, E. (C.)
Lurie, L. (L.)
MacDonald, J., Jr. (M.)
Manzella, F. S. (L.)
Margolies, A. L. (L.)
Maurer, G. E. (M.)
Maxwell, M. T. (L.)
Mayer, M. L. (L.)
McCready, R. L. (L.)
McEvoy, L. D. (M.)
McPhail, D. T. (C.)
Meierhof, H. L. (L.)
Michaels, L. (L.)
Miller, I. (L.)
Miller, M. A. (L.)
Nathan, P. W. (M.)
Neergard, A. E. (L.)
Nicholson, A. O. (L.)
Norton, G. E. G. (L.)
Olitsky, P. K. (L.)
Pearlman, L. M. (L.)
Pedersen, V. C. (M.)
Pidgeon, F. Z. (C.)
Poate, E. M. (L.)
Ramirez, A. A. (L.)
Rice, F. W. (L.)
Richards, A. C. (L.)
Ritchie, F. G. (M.)
Robins, B. L. (L.)
Rockwell, A. V. (L.)
Rohr, J. (L.)
Rosen, L. (L.)
Schleussner, R. C. (L.)
New York—Schmitt, A. H. (L.)
Schorr, H. E. (L.)
Schwartz, E. M. (L.)
Sheiffer, S. (L.)
Shiras, H. H. (L.)
Siegal, L. J. (L.)
Smith, J. S. (L.)
Sparks, W. R. (L.)
Sprout, L. E. (L.)
Steinbach, L. (L.)
Stillman, E. G. (L.)
Tenner, A. S. (C.)
Thomas, C. P. (L.)
Trachtenberg, I. (L.)
Vedder, H. A. (C.)
Vosburgh, A. S. (M.)
Weller, A. (L.)
White, F. W. (C.)
White, W. R. (C.)
Wolf, G. (C.)
Norwich—McNitt, H. W. (L.)
Owego—Thompson, S. W. (L.)
Peekskill—Moe, R. W. (L.)
Pompey—Hunt, F. A. (M.)
Rochester—Aikman, J. C. (L.)
Cornman, L. R. (C.)
Finnessy, J. H. (C.)
Flynn, J. C. (L.)
Fowler, W. F. (C.)
Godsell, P. H. (L.)
Imrie, G. T. (C.)
Laurence, R. V. (L.)
Maggio, C. (L.)
Paine, A. H. (L.)
Pfaff, N. J. (L.)
Sumner, C. (C.)
Sutherland, W. H. (C.)
Teresi, C. C. (L.)
Vary, H. C. (C.)
Whitney, G. C. (C.)
Wolin, D. (L.)
Romolus—Cole, T. F. (C.)
Rosebank—Wiggin, D. C. (M.)
Rye—Hogben, G. J. (L.)
Schenectady—Rosenberger, R. K. (L.)
Sidney—Young, P. S. (C.)
South Bethlehem—Augur, F. A. (L.)
Springville—Stanbro, F. H. (L.)
Staten Island—Skidmore, E. L. (L.)
Wang, S. L. (L.)
Syracuse—Abbett, A. C. (L.)
Fowler, S. R. (C.)
McNerney, W. J. (L.)
Mellor, L. R. (C.)
Nolan, L. S. (L.)
Potter, F. C. (C.)
Ruland, A. S. (C.)
Wright, G. L. (L.)
Thiells—Storrs, H. C. (L.)
Troy—Barnes, J. A. (C.)
Utica—Campbell, G. B. (M.)
Warwick—Sly, J. L. (L.)
Watertown—Davidson, J. M. (C.)
Van Doren, G. B. (C.)
Watkins—Norman, N. P. (M.)
Waverly—Spencer, F. H. (M.)
Wayland—Richmond, A. E. (L.)
Westport—Battin, J. A. (M.)
White Plains—Overton, W. C. (L.)
Zacharie, C. C. (C.)

NORTH CAROLINA

Asheville—Scruggs, W. H. (C.)
Beaver Creek—Ray, R. C. (L.)
Belmont—Pressly, J. M. (C.)
Canton—Russell, J. M. (L.)
Charlotte—Bangle, J. A. (L.)
Clemmons—Hege, J. R. (L.)
Glen Alpine—Long, B. L. (L.)
High Point—Taylor, F. R. (L.)
Kinston—Hyatt, A. L. (L.)
La Grange—Pritchard, G. L. (L.)
Mount Airy—Rowe, H. B. (C.)
Mount Olive—Morris, G. B. (C.)
Raleigh—Gibson, M. R. (L.)
Rowland—Carmichael, T. W. (L.)
Vineland—Whitaker, R. B. (L.)
Warrenton—Rodgers, W. D. (L.)
Wilmington—Bolles, C. P. (C.)
LeGwin, J. B. (L.)
Winston Salem—Long, V. M. (C.)

NORTH DAKOTA

Bismarck—Mella, H. (L.)
Roan, M. W. (C.)
Schipfer, L. A. (L.)
Bowman—Whittemore, A. A. (C.)
Castleton—Baldwin, W. P. (C.)
Fargo—Oftedal, A. (L.)
Glen Ullin—Benson, O. T. (L.)
Grand Forks—Witherstine, W. H. (L.)
Harvey—Moore, W. H. (C.)
Jamestown—Shepard, G. P. (C.)
Noonan—Smith, J. A. (L.)
Wyndmere—Wilder, K. W. (L.)

OHIO

Akron—Bissell, F. C. (L.)
Kneale, W. E. (L.)
Steinke, C. R. (L.)
Albany—Stanley, E. I. (C.)
Alger—Elliott, R. A. (L.)
Ansonia—Stephen, C. I. (L.)
Antwerp—Moats, G. E. (L.)
Ashland—Meuser, C. B. (L.)
Ashley—Johnson, J. C. (L.)
Ashville—Stout, J. O. (L.)
Bay Village—Saddler, J. L. (L.)
Bryan—Brondo, P. H. (L.)
Burns, D. S. (L.)
Bucyrus—Kehrer, F. W. (L.)
Lingenfelter, C. A. (L.)
Schoolfield, E. R. (C.)
Caldwell—Cleary, R. H. (L.)
Cambridge—Neeland, H. R. (L.)
Canton—Cable, C. H. (L.)
Kaufman, W. F. (L.)
March, H. A. (L.)
O'Hara, J. F. (L.)
Shorb, T. H. (C.)
Carey—Spitler, T. A. (L.)
Celina—Otis, L. M. (L.)
Cheviot—McHenry, L. L. (L.)
Chillicothe—Friedlander, A. (M.)
Cincinnati—Beekley, C. J. (C.)
Conzett, J. J. (L.)
DeCourcy, C. W. (L.)
Devers, A. B. (L.)
Duffey, J. A. (L.)
Graf, W. J. (L.)
Iglauer, S. (C.)
Jacobs, W. G. (L.)
Kasting, R. W. (L.)
Kramer, F. F. (L.)
Kramer, S. P. (M.)
Lurie, L. (L.)
McKim, G. F. (C.)
Podesta, J. S. (L.)
Reed, R. W. (C.)
Simmons, R. W. (L.)
Smith, S. (L.)
Swing, F. U. (C.)
Urner, M. H. (C.)
Ware, H. J. (M.)
Wilms, J. H. (L.)
Cleveland—Austin, J. B. (C.)
Beels, R. J. (L.)
Black, J. A. (L.)
Bowers, C. A. (L.)
Crumrine, H. C. (C.)
Deacon, E. M. (L.)
Denison, T. A. B. (L.)
Dunbar, G. S. (L.)
Kintzler, L. C. (L.)
Kocinski, C. J. (L.)
Kuhlman, E. G. (L.)
MacLachlan, J. (C.)
Ochs, K. E. (L.)
Olsen, I. S. (L.)
Ravitz, L. R. (L.)
Rienmschneider, O. H. (L.)
Robertson, A. E. (L.)
Season, E. H. (C.)
Selman, D. (L.)
Seward, E. (C.)
Shirey, O. M. (C.)
Thompson, H. S. (L.)
Updegraff, R. K. (C.)
Wahl, H. R. (C.)
Williams, R. W. (M.)
Yoder, H. E. (L.)
Cleveland Heights—Hultenschmidt, W. J. (L.)
Columbus—Blakeley, H. B. (C.)
Bowman, J. M. (L.)
Brehm, G. W. (M.)
Brobst, J. W. (L.)
Coburn, E. E. (L.)
Herbst, E. (C.)
Howe, Long, B. L. (C.)
Prushing, H. (L.)
Sanor, D. G. (C.)
Stevenson, R. B. (L.)
Tanner, C. (L.)
Warren, J. H. (L.)
Conneaut—Crandall, H. (L.)
Hurley, E. T. (L.)
Custer—Mannhardt, W. W. (L.)
Dayton—Meckstroth, H. L. (L.)
Walkup, T. C. (L.)
Wellbrook, G. H. (C.)
Dennison—Wilson, R. A. (M.)
Dover—Keller, W. R. (L.)
Dunkirk—Blosser, C. L. (L.)
Frankfort—Brengle, E. W. (L.)
Tinker, L. M. (C.)
Fredericksburg—Maxwell, G. B. (L.)
Fredericktown—Norrick, J. H. (L.)
Fulton—Leonard, E. L. (C.)
Girard—Hunt, F. C. (L.)
Hamilton—Burdsall, H. L. (C.)
Wilkinson, H. L. (L.)
Williams, C. A. S. (L.)
Hamler—Hissong, C. G. (L.)
Holgate—Earp, J. F. (L.)
Homer—Coburn, A. (L.)

Huron—Houghtaling, F. M. (L.)
Jackson—Harbarger, J. W. (C.)
Hunter, J. S. (L.)
Kenton—Bowman, D. H. (L.)
Johnson, B. L. (C.)
Kingston—Hatfield, C. C. (L.)
Lakewood—Anderson, A. W. (L.)
Lancaster—Silbaugh, J. J. (C.)
Latty—Mouser, R. H. (L.)
Lebanon—Blair, R. M. (L.)
Blair, W. E. (L.)
Leetonia—Travis, W. T. (L.)
Lima—Johnson, J. R. (L.)
Steiner, O. S. (C.)
London—Rosnagle, F. E. (L.)
Lorain—Adair, W. (L.)
Loveland—Coleman, J. M. (L.)
Marion—McMurray, J. W. (C.)
Martins Ferry—Woodruff, E. W. (L.)
Medina—Robinson, H. P. H. (C.)
Meeker—Field, F. F. (L.)
Middletown—Blood, H. J. (L.)
Montpelier—Wertz, H. W. (C.)
Napoleon—Quinn, T. (L.)
Rohrs, H. F. (L.)
National Military Home—Vega, J. J. (L.)
Nelsonville—Rhodes, W. S. (L.)
Welch, C. E. (C.)
New Canton—DeWitt, J. P. (C.)
Newcomerstown—Hays, S. B. (L.)
Newport—Gale, L. B. (L.)
Norwalk—Sipher, J. E. (L.)
Norwood—Schneider, E. B. (L.)
Wakeman, C. L. (L.)
Oakwood—Burson, A. F. (L.)
Orient—Nosker, R. W. (L.)
Perrysburg—Bowers, M. H. (L.)
Pierpont—Lewis, G. W. (L.)
Piqua—Yates, E. A. (L.)
Portsmouth—Braunlin, W. A. (L.)
Gault, W. E. (C.)
Schafer, W. D. (L.)
Prairie Depot—Whitacre, R. F. (L.)
Ravenna—Prichard, L. W. (C.)
Rittman—Alexander, E. R. (L.)
Sandusky—Liblicq, F. J. (L.)
Sowash, H. L. (L.)
Scott—Duckwall, F. C. (L.)
Shreve—Ice, K. C. (L.)
Sidney—Silver, A. (L.)
Springfield—Brubaker, E. R. (L.)
St. Mary's—Noble, W. A. (L.)
St. Paris—Hamsher, J. F. (L.)
Stony Ridge—Price, W. H. (C.)
Tiffin—Magers, V. L. (L.)
Toledo—Becker, K. C. (L.)
Burman, H. F. (L.)
Burritt, C. A. (C.)
Davis, J. R. (L.)
Dunlap, G. W. (L.)
Hartung, W. H. (L.)
Hasencamp, O. (C.)
Kern, P. E. (L.)
Kreft, F. G. (L.)
Mellott, E. R. (L.)
Morgan, H. J. (C.)
Pamment, H. G. (L.)
Parisen, G. B. (C.)
Wheeler, A. W. (C.)
Troy—Shinn, J. S. (L.)
Uhrichsville—Guthrie, G. C. (L.)
Upper Sandusky—Naus, W. L. (L.)
Valley City—Appleby, A. G. (M.)
Van Wert—Tuttle, S. S. (C.)
Versailles—Reprogle, E. G. (L.)
Robinson, F. J. (L.)
Warrensville — Bonsteel, E. O. (C.)
Washington Court House—Woodmanse, A. D. (L.)
West Unity—Critchfield, O. D. (L.)
Willard—Whisler, L. H. (L.)
Willow Wood—Burton, C. (L.)
Xenia—Messenger, H. C. (L.)
Youngstown—Lautenschlager, T. H. (L.)
Lewis, J. S., Jr. (L.)
Nagel, E. H. (L.)
Redd, W. C. (L.)
Riggs, R. W. (L.)
Zanesville—Gorrell, A. H. (C.)
McCormick, G. W. (L.)

OKLAHOMA

Altus—Landrum, S. H. (L.)
Bartlesville — Kingman, W. H. (L.)
Blanchard—Shi, T. P. (L.)
Bokohoma—Oliver, R. B. (L.)
Claremore—Lerskoy, A. N. (L.)
Cleveland—Robinson, E. T. (L.)
Cloud Chief—Baker, B. W. (L.)
Coalgate—Sadler, F. E. (L.)
Collinsville—Hughes, L. (L.)
Cowlington—Conn, L. D. (L.)
Elk City—Rone, K. R. (C.)
Fairland—Smith, W. B. (L.)
Frederick—Gillis, J. A. (C.)
Grandfield—Wright, H. (L.)
Granite City—Luster, R. D. (L.)
Gray—Fewkes, J. M. (L.)
Guthrie—Rucks, W. (M.)
Haskell—Davis, E. (L.)
Indianola—Baker, J. H. (L.)
Laverne—Barber, J. J. (L.)
Marietta—Martin, A. E. (L.)
McAlester—Barton, V. H. (C.)
Wait, W. C. (L.)
Miami—Jacobs, J. C. (C.)
Woodcock, J. H. (C.)
Muskogee—Heitzman, C. W. (C.)
Nowata—Allen, R. I. (L.)
Oilton—Rutherford, B. C. (L.)
Okemah—Bloss, C. M. (L.)
Oklahoma City—Black, A. L. (M.)
Cloudman, H. H. (C.)
Guthrie, A. L. (C.)
Postelle, J. M. (C.)
Riely, L. A. (C.)
Sanger, F. M. (C.)
Pauls Valley—Spangler, A. S. (L.)
Pawhuska—Walker, R. (L.)
Pawnee—Wattoner, R. E. (L.)
Pond Creek—Enos, L. (L.)
Red Rock—Cotton, D. F. (C.)
Sallisaw—Ferguson, J. B. (L.)
McKeel, S. A. (L.)
Shawnee—Scott, J. H. (C.)
Shrout, C. B. (L.)
Stigler—Hill, T. C. (L.)
Stillwell—Walters, C. A. (C.)
Sulphur—Bailey, H. C. (L.)
Salter, J. M. (C.)
Supply—Stecher, H. E. (L.)
Tulsa—Clement, J. R. (C.)
Price, H. P. (L.)
Yale—Stuck, L. A. (L.)

OREGON

Astoria—Finch, A. A. (M.)
Hot Lake—Phy, W. T. (C.)
La Grande—Hall, M. K. (C.)
Lebanon—Booth, J. C. (C.)
Miller, R. B. (L.)
Oregon City—Hempstead, W. E. (C.)
Welsh, O. A. (L.)
Portland—Anderson, W. R. (L.)
Hill, C. E. (C.)
Pease, G. N. (L.)
Sternberg, J. D. (C.)
Wetherbee, J. R. (M.)
White, C. S. (M.)
Springfield—Barr, J. R. (L.)

PENNSYLVANIA

Allentown—Reitz, C. B. (C.)
Allison—Frankenvurger, W. S. (L.)
Altoona—Walton, L. S. (C.)
Ashland—Roth, J. P. (L.)
Atglen—Baker, F. L. (C.)
Athens—Coon, C. M. (C.)
Cowell, E. M. (C.)
Bethlehem—Rauch, S. E. (L.)
Bellwood—Levenwood, B. B. (L.)
Black Lick—Widdowson, W. C. (C.)
Blain—Woods, H. W. (L.)
Blairsville—Leonard, J. M. (L.)
Bloomsburg—Miller, R. E. (L.)
Bradford—Ash, G. G. (L.)
Butler—Ziegler, A. H. (L.)
Cannonsburg—Kelso, J. C. (L.)
Carbondale—Loftus, W. E. (L.)
Carlisle—Hudson, E. A. (L.)
Carnegie—Moore, J. E. (L.)
Carrollton—Mulvehill, V. J. (L.)
Charleroi—McKay, E. (M.)
Clairton—Nodjimbadem, C. B. (L.)
Cochranton—Imbrie, C. E. (C.)
Conneautville—Dickey, S. J. (L.)
Coraopolis—Braden, F. R. (L.)
Copper, J. S. (L.)
Cynwyd—Lueders, C. W. (C.)
Danville—Nebinger, R. (L.)
Dunlo—Livingston, W. W. (L.)
Easton—Correll, R. R. (L.)
McCormack, H. E. (L.)
Seipel, R. L. (L.)
Eldred—Eldred, E. M. (C.)
Erie—Jackson, J. D. (L.)
McCallum, M. J. (L.)
McNeill, C. A. (L.)
Farrell—Breene, L. N. (C.)
Franklin—Ashton, C. H. (L.)
Stone, H. S. (C.)
Germantown—Adams, A. M. (L.)
Collins, E. G. (L.)
Gettysburg—Craig, L. R. (C.)
Glen More—Johnson, J. H. (L.)
Glenshaw—Fausold, L. C. (C.)
Glenside—Huber, W. H. (L.)
Greenville — McElhaney, C. W. (L.)
Harrisburg—Basler, W. J. (L.)
Dailey, G. L. (L.)
Harrisville—Duff, T. E. (L.)
Hazleton—Reiche, O. C. (L.)
Heckscherville — Sweeney, J. J. (L.)
Heilwood—Lyon, G. R. (L.)
Hollidaysburg—Calvin, W. (L.-C.)
Homer City—Palmer, M. M. (L.)
Homestead—Rinard, C. C. (C.)
Honesdale—Baer, J. A. (L.)
Hulmeville—Paxson, R. R. (C.)
Indiana—Davis, M. M. (L.)
Rink, C. E. (L.)
Jeannette—Halyama, G. E. (L.)
Reidt, U. H. (L.)
Johnsonburg—Sharp, E. B. (C.)
Johnstown—Gurley, L. M. (C.)
Kemblesville—Aaronoff, J. (L.)
Kingston—Jenkins, N. H. (L.)
Knoxville—Mayer, W. H. (L.)
Latrobe—Abbaticchio, N. E. (L.)
Leacock—Keylor, W. N. (C.)
Ligonier—Johnson, J. B. (C.)
Lilly—Dougherty, W. S. (L.)
Loganton—Mahr, I. O. (L.)
Ludlow—Young, R. L. (L.)
McKeesport—Evans, E. E. (C.)
Jordan, S. S. (L.)
McKees Rock—Henney, P. J. (L.)
Meadville—Winslow, H. C. (L.)
Melrose—Kohler, W. H. (L.)
Mercer—Yeager, M. G. (C.)
Mercerburg—Nevin, B. E. (L.)
Merion—Watson, W. N. (L.)
Minersville — Monaghan, J. M. (L.)
Monesson—Herron, T. B. (L.)
Monongahela—Allen, J. H. (L.)
Warner, J. G. (L.)
Mount Carmell—Buckley, W. R. (L.)
Nanty Glo—McAnulty, A. H. (L.)
New Brighton—Pettler, S. H. (L.)
New Castle—Johnston, C. W. (L.)
New Kensington—Johnston, R. M. (L.)
Pessolano, F. J. (L.)
Piper, E. N. (L.)
New Ringgold—Bley, H. (L.)
Norwood Station—Harris, S. B. (C.)
Oakdale—Denny, C. B. (L.)
Oil City—Summerville, F. M. (C.)
Olyphant—Price, J. J. (L.)
Peckville—Armstrong, R. H. (L.)
Pen Argyl—Andrew, W. E. (L.)
Philadelphia—Baron, S. (L.)
Barry, W. D. (L.)
Davis, W. B. (C.)
Dubell, A. K. (L.)
Farr, C. B. (M.)
Gile, B. C. (M.)
Godfrey, H. G. (C.)
Hammond, F. C. (M.)
Hubbs, S. S. (L.)
Joseph, M. H. (L.)
Jungmann, J. D. (C.)
Knorr, J. K., Jr. (C.)
Kurz, K. L. (L.)
Leidy, J. (C.)
Leopold, H. P. (C.)
McConaghy, A. (M.)
Mirman, J. M. (L.)
O'Donnell, D. S. (L.)
Pancoast, C. H. (L.)
Pepper, W. (L. C.)
Perkins, J. A. (L.)
Platt, M. (L.)
Reimann, S. H. (L.)
Sampson, A. G. (L.)
Schofield, J. D. (L.)
Seiberling, J. D. (L.)
Shapiro, M. S. (C.)
Tegtmeier, C. (C.)
Vedder, C. V. B. (L.)
Weiss, W. (L.)
Williams, H. J. (L.)
Wilson, G. (L.)
Wilson, O. H. (L.)
Pittsburgh—Bianco, A. (L.)
Blough, R. E. (L.)
Boggs, D. A. (L.)
Bowman, C. L. (L.)
Bryant, W. C. (C.)
Clark, R. S. (L.)
Conway, J. B. (L.)
Crozier, A. W. (L.)
Cruikshank, O. T. (C.)
Donaldson, J. O. (L.)
Edmundson, F. B. (L.)
Ford, R. J. (L.)
Frishman, J. M. (L.)
Hensell, R. S. (C.)
Hodgkiss, J. (L.)
Kistler, J. D. (L.)
Kunkelman, D. R. (L.)
Kvatsak, J. J. (L.)
Lange, C. C. (L.)
Lebeau, S. F. (L.)
Leininger, C. P. (L.)
Litchfield, L. (M.)
McAdams, E. C. (L.)
McCullough, C. L. (L.)
Mitchell, L. M. (L.)
Pittsburgh—Salisbury, F. S. (L.)
Shaw, J. B. (L.)
Simpson, F. F. (L. C.)
Smith, H. P. (L.)
Stepp, L. L. (L.)
Stillwagon, C. A. (C.)
Sunseri, S. C. (L.)
Thompson, W. H. (L.)
Walker, G. H. (C.)
Wirts, C. W. (C.)
Pottsville—Moore, G. H. (L.)
Reading—Knoll, F. W. (L.)
Sondheim, S. J. (L.)
Wagner, J. L. (C.)
Yocom, C. A. (L.)
Reamstown—Russell, E. D. (L.)
Rochester—Yost, W. M. (L.)
Scranton—Brown, C. G. (C.)
Butzner, J. D. (C.)
Reed, H. R. (L.)
Stein, J. (C.)
Shamokin—Holt, L. M. (L.)
Simmons, R. H. (C.)
Sharon—Heilman, R. S. (L.)
Silver Creek—Flanigan, J. L. (L.)
Somerset—Louther, S. J. H. (C.)
South Bethlehem—Cathrall, W. J. (L.)
Stroudsburg—Levering, W. R. (L.)
Sugar Grove—Bradshaw, G. M. B. (L.)
Sunbury—McCay, R. B. (L.)
Uniontown—Boord, P. C. (L.)
Unionville—Klevan, O. J. (L.)
Vandergrift—Slagle, A. I. (L.)
Washington—Ruben, S. A. (L.)
Wattsburg—Fearn, J. W. (C.)
Weatherly—Freyman, I. E. (C.)
West Brownsville—Farquhar, H. L. (L.)
West Chester—Hemphill, J., Jr. (C.)
Webb, W. (C.)
West View—Torrens, A. E. (L.)
Whiteley—Core, A. R. (L.)
Wilkes-Barre—Dinkelspiel, M. R. (L.)
Shuman, G. A. (L.)
Wilkinsburg—Ellenberger, J. W. E. (L.)
Williamsburg—McGregor, W. J. (L.)
Windber—Benshoff, A. M. (L.)
York—Gilbert, I. (M.)
Miller, J. S. (L.)
Shatto, A. B. (L.)
Youngwood—Caven, A. H. (L.)

RHODE ISLAND

Pawtucket—O'Neill, J. B. (L.)
Phenix—Legris, J. A. (L.)
Providence—Collins, C. M. (L.)
Keefe, J. W. (M.)
McCarthy, J. M. (L.)
Street, W. W. (L.)
Whitten, R. H. (C.)
Wyman, T. C. (L.)

SOUTH CAROLINA

Abbeville—Gambrell, C. C. (C.)
Blacksburg—Roberts, W. M. (L.)
Charleston—Boettic, C. D. (L.)
Clinton—Davis, J. W. (C.)
Cliver—Campbell, I. J. (L.)
Columbia—Caughman, B. D. (L.)
Due West—Pressly, W. L. (L.)
Florence—Bramwell, J. M. (L.)
Georgetown—Brown, W. A. (L.)
Greenville—Tyler, G. T., Jr. (C.)
Monetta—Kneece, B. E. (L.)
Pickens—Talley, J. F. (C.)
Spartanburg—Clark, N. T. (L.)
Wilson, G. D. (C.)
Zimmerman, W. S. (C.)
St. Matthews—Symmes, T. H. (L.)

SOUTH DAKOTA

Aberdeen—Johnston, M. C. (C.)
Aurora—Foster, J. W. (L.)
Brookings—Green, B. T. (C.)
Doland—Williams, C. A. (L.)
Dupree—Teamer, F. H. (L.)
Hot Springs—Cornforth, H. H. (L.)
Lead—Jackson, A. S. (L.)
Miller—McWhorter, P. (L.)
Murdo—Hunt, W. M. (C.)
Nisland—Townsend, F. E. (L.)
Ree Heights—Paddleford, J. F. (L.)
Sioux Falls—Putnam, F. I. (L.)
Sturgis—Brackett, J. W. (C.)
Winifred—Barthell, J. F. (C.)

TENNESSEE

Alexander—Neil, J. B. (L.)
Aloka—Brown, G. B. (L.)
Beech Grove—Wysong, H. C. (L.)
Bristol—Bachman, H. W. (L.)
Camden—Smyth, J. M. (L.)

Chattanooga—Ellis, G. M. (M.)
Laws, H. A., Jr. (L.)
Patton, E. W. (L.)
Cleveland—Chambers, T. E. P. (C.)
Covington—Holloway, W. P. (L.)
Kelly, N. W. (L.)
Dixon—Spring—Garrett, R. E. (L.)
Eads—Baker, R. K. (L.)
Greenfield—Fowlkes, J. R. W. (C.)
Thomas, G. C. (L.)
Johnson City—Miller, H. D. (L.)
Knoxville—Carroll, H. L. (L.)
Copenhauer, M. M. (C.)
McMullen, L. S. (L.)
Patterson, R. W. (C.)
Rain, C. W. (L.)
Rogers, O. W. (L.)
Wickliffe, J. T. P. (L.)
Lewisburg—Hardison, J. A. (C.)
Martin—Stewart, J. M. (L.)
Memphis—Allen, C. A. (L.)
Andrews, J. L. (M.)
Blackwell, W. G. L. (L.)
Blecker, A. L. (L.)
Kaplan, M. (L.)
Mason, J. W. (L.)
Wood, P. H. (L.)
Milan—Clopton, A. T. (L.)
Millington—Ellison, H. L. (L.)
Mohawk—Dyer, L. E. (C.)
Nashville—Burch, L. F. (L. C.)
DeWitt, P. (C.)
Sanders, J. A. (L.)
Searight, M. W. (L.)
Thomason, C. F. (L.)
Wyatt, R. E. (L.)
Young, T. H. (L.)
Newbern—Turner, C. B. A. (L.)
Pleasant View—Woodruff, S. T. (L.)
Ripley—Sanford, W. V. (L.)
South Pittsburg—Anderson, S. N. (L.)
Stanton—Wilkerson, L. O. (L.)
Tate—Idol, J. H. (L.)
Union City—Blanton, M. A. (C.)
Loring, B. F. (L.)
Wartrace—Horton, G. E. (M.)
Washington College—Ruble, R. H. (L.)

TEXAS

Abilene—Hedrick, T. W. (L.)
Pickard, L. J. (C.)
Alpine—Middlebrook, J. R. (L.)
Appleby—Tindall, C. H. (L.)
Austin—Gill, J. M. F. (C.)
Weller, C. W. (L.)
Beeville—Bowman, N. H. (M.)
Belton—Crain, A. B. (C.)
Blardstown—Robson, O. W. (L.)
Big Wells—Pickett, B. E. (L.)
Boyce—Jones, J. E. (L.)
Brandon—Smith, B. C. (L.)
Bronte—Blanton, A. G. (L.)
Brownwood—Snyder, E. P. (L.)
Canadian—Snyder, E. H. (L.)
Carthage—Baker, A. M. (L.)
Cisco—Griswold, G. W. (L.)
Coleman—Bailey, R. (C.)
Cotulla—Lightsey, J. N. (L.)
Dalhart—Tillotson, C. H. (L.)
Dallas—Boren, E. R. (L.)
Cowart, R. W. (L.)
Donald, H. (L.)
Millwee, R. H. (L.)
Watson, J. T. (C.)
Dickens—Blackwell, T. H. (L.)
Dodsonville—Beach, D. B. (L.)
Durango—King, F. B. (L.)
Eagle Ford—Sappinton, T. B. (L.)
Eagle Lake—Doole, T. P. (C.)
Elkhart—Hicks, J. H. (L.)
El Paso—Armistead, E. K. (L.)
Vance, J. (C.)
Witherspoon, L. G. (C.)
Flint—Doss, J. M. (L.)
Fort Worth—Hall, E. P. (C.)
Mackey, W. B. (C.)
Saunders, D. J. (L.)
Saunders, R. F. (M.)
Wilkins, H. F. (L.)
Gonzells—Stahl, L. J. (L.)
Graham—Padgett, W. O. (L.)
Grand Saline—Cozby, V. B. (L.)
Houston—Grimes, G. D. (C.)
Ralston, W. (M.)
Killeen—Ellis, J. W. (L.)
Klondike—Bradford, C. T. (L.)
Liberty Hill—Vaughan, J. H. (L.)
Lipscomb—Newland, C. A. (L.)
Lubbock—Hutchinson, J. T. (C.)
Lufkin—Gibson, B. F. (L.)
Marietta—Shaddix, J. W. (L.)
Marlin—Logsdon, W. K. (L.)
Shaw, F. H. (C.)
Streit, A. J. (L.)
Mexia—Jackson, A. A. (L.)
New Boston—Ball, S. C. (L.)
Odessa—Bell, M. C. (C.)
Pattonville—Biard, A. C. (L.)
Pearland—Long, W. E. (L.)
Plainview—Dawson, L. V. (L.)
Pleasanton—Atkinson, R. (L.)
Poolville—McConnell, J. A. (L.)
Port Arthur—Bledsoe, M. F. (C.)
Rockdale—Barkley, T. S. (L.)
Coulter, H. T. (L.)
San Antonio—Allis, F. A. (L.)
Herff, F. P. (C.)
Hirzel, W. C. (L.)
Parker, T. T. (L.)
Taylor, C. W. (C.)
Santa Anna—Ramsdell, M. A. (L.)
Savoy—Carter, C. S. (M.)
Sidney—Hays, P. G. (L.)
Sunset—Wright, E. W. (L.)
Sweetwater—Dupree, W. A. (L.)
Tahoka—McCoy, J. H. (L.)
Texarkana—Lanier, L. H. (L.)
Waco—Gage, S. C. (C.)
Lattimore, J. E. (L.)
Lovelace, C. (M.)
Smith, E. E. (L.)
Weatherford—Bunch, H. S. (C.)
Wellington—Jones, E. W. (L.)
Wills Point—Sanders, D. L. (C.)

UTAH

Salt Lake City—Crismon, K. A. (C.)
Ewing, W. B. (C.)
Irvine, A. R. (C.)
Maghee, F. W. (C.)
Neilson, C. J. (L.)

VERMONT

Burlington—Perkins, C. N. (L.)
Cambridge—Start, S. G. (C.)
Hartland—Ward, C. E. (L.)
Montgomery—Worden, R. D. (L.)
Montpelier — Parmenter, G. H. (L.)
Rutland—Hanrahan, H. H. (L.)
South Woodbury—Hall, G. G. (L.)
White River Junction—Drake, D. S. (L.)
Stanley, M. P. (L.)
Wilder—Goss, R. J. (L.)
Windsor—Miner, R. H. (C.)
Woodstock—Kidder, C. W. (L.)

VIRGINIA

Appalachia—Peters, W. B., Jr. (C.)
Barrow's Store—Barrow, B. (C.)
Cambria—Altizer, E. R. (L.)
Charlottesville—Amos, C. A. (L.)
Fin Castle—Buckenridge, W. N. (C.)
Heatsville—Rice, J. A. (C.)
Kerrs Creek—Obenschain, C. P (L.)
Lexington—White, R. (M.)
Louisa—Crum, J. H. (L.)
Lovington—Horsley, F. M. (L.)
Lynchburg—Winters, J. W. (C.)
Midland—Grant, J. L. (L.)
New Kent—Vaiden, J. B. (L.)
Newport News—Mabry, J. H. (L.)
Morewitz, T. D. (L.)
Willis, F. D. (L.)
Norfolk—Grant, H. C. (L.)
Gwathmey, L. (M.)
Pocahontas—Moore, J. H. (L.)
Purcellville — Thompson, R. M. (L.)
Raven—Weatherly, O. A. (L.)
Richmond—Foster, J. F. (L.)
Odeneal, T. H. (C.)
Williamson, W. F. (L.)
Roanoke—Maxwell, G. M. (C.)
Powell, W. L. (C.)
Topham, B. E. (L.)
Willis, J. D. (L.)
Salem—Kolmer, G. L. (L.)
Stewart—Divers, G. T. (L.)
Toms Brook—Stoneburner, R. W. (L.)
Waverly—Stoneham, H. G. (L.)

WASHINGTON

American Lake—Thiel, H. F. (L.)
Bellingham—Powell, I. W. (C.)
Enumclaw—Ulman, P. G. (C.)
Friday Harbor—Reed, C. O. (C.)
Montesano—Brachvogel, M. W. (C.)
Port Townsend—Simmons, W. R. (L.)
Puyallup—Runnalls, T. H. B. (L.)
Ronald—Rahal, C. G. (L.)
Seattle—Crimmins, P. P. (L.)
Long, L. D. (L.)
Sedro-Woolley—Harbaugh, C. C. (C.)
Spokane—Burger, T. D. (L.)
Laird, R. L. (L.)
Lawrence, E. J. (L.)
Wallace, J. E. (C.)
Sumas—Shryock, H. W. (L.)
Tacoma—McCreery, C. R. (C.)
Staatz, K. S. (C.)

WEST VIRGINIA

Camden—Greene, W. H. (C.)
Charleston—Amick, A. L. (L.)
Henson, E. L.)
Romine, T. E. (L.)
Walker, R. H. (L.)
Clendenin—Smoot, E. W. (L.)
Dingess—Moore, J. M. (C.)
Elkins—Fredlock, A. M. (C.)
Henderson—Arnett, U. G. (C.)
Huntington—Marple, F. O. (L.)
Letark—Smith, D. V. (L.)
Lillybrook—Hoskins, J. H. (L.)
Masontown — Wichteman, E. J. (L.)
Morgantown—Fisher, R. W. (L.)
Moundsville—Morgan, C. G. (L.)
Netter Fort—Riley, R. M. (L.)
Philippi—Williams, C. B. (C.)
Point Pleasant—McElfresh, E. L. (C.)
Quinnimont—Lewis, W. D. (L.)
Salem—Langfitt, F. V. (L.)
Sandyville—Currey, W. L. Y. (L.)
Spencer—Parks, B. S. (L.)
Robertson, G. C. (L.)
Switzer—Davis, H. E. (L.)
Werrton—Makin, J. B. (L.)
Wheeling—Silver, H. (L.)
Vieweg, C. L. (C.)
Vieweg, M. W. (L.)
White Sulphur Springs—Wyatt, G. (L.)
Williamson—Salton, R. A. (L.)
Slayden, T. (C.)

WISCONSIN

Abrams—Faulds, R. C. (C.)
Cato—Gerend, A. J. (L.)
Chilton—Bolton, E. L. (C.)
Dallas—Wiger, H. C. (L.)
Eau Claire—Seemann, W. O. (C.)
Excelsior—Pippin, B. I. (L.)
Fond du Lac—Gavin, S. E. (M.)
Lawrence, S. H. (C.)
Gays Mills—Rice, H. A. (C.)
Green Bay—Gosin, D. F. (L.)
McNevins, E. S. (L.)
Janesville—Welch, F. B. (L.)
Kenosha—Murphy, S. W. (L.)
Kewaunee—Dishmaker, D. B. (L.)
Madison—Corlett, M. S. (L.)
Smith, K. W. (C.)
Manitowoc—Staehle, M. (C.)
Mason—Harrison, D. C. (C.)
Mazomaine—Griswold, F. C. (L.)
Milwaukee—Dallwig, H. C. (L.)
Darling, W. G. (L.)
Forsbeck, F. A. (C.)
McLaughlin, F. H. (C.)
Mehigan, D. D. (L.)
Rigby, E. D. (C.)
Seeger, S. J. (L.)
Sutter, E. H. (L.)
Montello—Federman, E. H. (L.)
Oconto—Ouellette, C. J. (C.)
Oshkosh—Bunch, M. M. (L.)
Nims, C. H. (C.)
Platteville—Schuldt, C. M. (L.)
Richland Center—Benson, G. H. (C.)
McKee, F. W. (C.)
Sheboygan—Ryan, E. S. (L.)
Superior—Ground, W. E. (C.)
Thorp—Jackey, F. D. (C.)
Watertown—Ottow, A. F. W. (L.)
Waupun—Sleyster, L. R. (M.)
Wausau—Schlegel, H. T. (L.)
Wautoma—Cox, J. A. (L.)
Wauwatosa—Schoofs, O. P. (L.)

WYOMING

Cheyenne—Beard, C. Y. (L.)
Riverton—Tonkin, A. B. (C.)

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To East Norfolk, Mass., from Camp Jackson, Capt. T. LAWRENCE, Tuscaloosa.

To Jefferson Barracks, Mo., from Camp Sevier, Major H. B. WILKINSON, Montgomery.

To New Orleans, La., from Camp Gordon, Lieut. T. H. SUDDUTH, Garden City.

To South Baltimore, Md., from Fort Oglethorpe, Lieut. M. H. ESKEW, Selma.

Arizona

To Fort Sam Houston, Texas, base hospital, from Camp Travis, Capt. S. D. WHITING, Salt River.

Arkansas

To Baltimore, Md., from Camp Gordon, Capt. J. WILKINS, Hot Springs.

To Camp Travis, Texas, from Southern Department, Lieut. W. S. McCALL, Barfield.

To Fort Des Moines, Iowa, from Fort Logan H. Roots, Col. G. F. JUENEMANN.

To Newport News, Va., from Camp Dix, Capt. L. J. KOSMINSKY, Texarkana.

To Walter Reed General Hospital, D. C., for instruction, from Camp Lee, Capt. R. C. KORY, Little Rock.

California

To Camp Lee, Va., base hospital, from Walter Reed General Hospital, Capt. T. J. BERGGREN, Coronado.

To Camp Lewis, Wash., from Berkeley, Lieut. A. S. GOUGH, Los Angeles. Base hospital, from Fort McDowell, Lieut.-Col. H. H. SHARPE.

To Camp Travis, Texas, from Tucson, Lieut. O. C. HYDE, Lincoln.

To San Francisco, Calif., from Vancouver Barracks, Capt. J. C. GRAFFIN, Fallbrook. Letterman General Hospital, from Camp Fremont, Lieut. C. A. CRAIG, San Francisco; from Camp Lewis, Lieut. A. F. MAINE, Alameda.

The following order has been revoked: *To Fort Oglethorpe*, from Camp Crane, Lieut. A. L. COHN, San Francisco.

Colorado

To Denver, Colo., from New Haven, Lieut. E. D. DOWNING, Woodmen.

To Fort McHenry, Md., from Camp Wadsworth, Lieut. K. F. ROEHRIG, Denver.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Lieut.-Col. G. B. WEBB, Colorado Springs.

Connecticut

To Camp Devens, Mass., from New Haven, Major M. C. WINTERNITZ, New Haven.

To Camp Meade, Md., base hospital, from the Surgeon-General's Office, Lieut. H. E. STEWART, New Haven.

To Chicago, Ill., from Boston, Major L. W. BACON, New Haven.

To Denver, Colo., from Vancouver Barracks, Major H. S. ARNOLD, New Haven.

To Fort Williams, Me., from Camp Dix, Capt. F. G. GOODRIDGE, Pomfret Center; Lieut. E. F. PERRY, Putnam.

To Washington, D. C., Surgeon-General's Office, from New Have , Col. C. F. CRAIG.

Delaware

To Eastview, N. Y., from Camp Lee, Lieut. V. D. WASHBURN, Wilmington.
To Fort McHenry, Md., from Fort Sill, Capt. B. A. JENKINS, Wilmington.

District of Columbia

To Camp Grant, Ill., base hospital, from Rochester, Major J. B. PIGGOTT, Washington.
To Camp Meade, Md., to examine the command for nervous and mental diseases, from Camp Greene, Lieut. C. B. COVEY, Washington.
To Fort Snelling, Minn., from the Surgeon-General's Office, Lieut.-Col. E. R. GENTRY.
To Hoboken, N. J., from the Surgeon-General's Office, Lieut.-Col. F. H. GARRISON, Washington.
To New York, from Camp Meade, Capt. W. J. MANNING, Washington.
To San Francisco, Calif., Letterman General Hospital, as commanding general, from the Surgeon-General's Office, Lieut.-Col. E. C. NORTHINGTON.

Florida

To Camp A. A. Humphreys, Va., as camp surgeon, from Camp Joseph E. Johnston, Lieut-Col. A. D. DAVIS.
To Camp Gordon, Ga., base hospital, from Camp Joseph E. Johnston, Lieut. C. A. PETERSON, Jacksonville.
To Camp Jackson, S. C., from Camp MacArthur, Capt. E. BLACKSHEAR, Citra.
To Fort Sheridan, Ill., from Fort Riley, Capt. H. C. DOZIER, Ocala.

Georgia

To Camp Abraham Eustis, Va., as camp surgeon, from Fort Oglethorpe, Lieut.-Col. T. J. FLYNN.
To Camp Beauregard, La., from Camp MacArthur, Lieut. S. E. BRAY, Savannah.
To Camp Jackson, S. C., base hospital, from Camp Joseph E. Johnston, Lieut. K. E. FOSTER, College Park.
To Camp Travis, Texas, from Fort Sill, Capt. E. R. HARRIS, Bethlehem.
To Camp Zachary Taylor, Ky., from Camp Sherman, Capt. J. M. SIGMAN, Macon.
To Fort Oglethorpe, from Camp Forrest, Capt. W. E. McCURRY, Hartwell.
To Newport News, Va., from Fort McPherson, Lieut. C. H. DICKENS, Grayson.
To Philippine Islands, from Fort Oglethorpe, Capt. W. M. CAFFEE.
To Pittsburgh, Pa., from Fort Oglethorpe, Capt. R. DUCAT.
To Plattsburg Barracks, N. Y., from Fort Oglethorpe, Col. J. C. GREGORY, Capt. W. A. SHAW.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Rochester, Minn.*, for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. O. S. GILLILAND.
To Roland Park, Md., from Camp Joseph E. Johnston, Lieuts. S. M. HOWELL, Cartersville; J. M. BRYANT, Savannah.
To San Diego, Calif., Rockwell Field, as flight surgeon, from Sacramento, Capt. J. H. HALL, Atlanta.
To Walter Reed General Hospital, D. C., from Camp Jackson, Capt. W. C. PUMPELLY, Macon.
To Washington, D. C., Surgeon-General's Office, from Fort Oglethorpe, Capt. E. L. COOK.

Idaho

To Camp Dodge, Iowa, from Rochester, Minn., Lieut. E. W. FOX, Arco.

Illinois

To Boston, Mass., from New Haven, Lieut. I. PILOT, Chicago.
To Camp Dodge, Iowa, base hospital, from Camp Greene, Capt. E. D. WISE, Champaign.
To Camp Grant, Ill., base hospital, from Camp Sevier, Lieut. S. P. BLIM, Crete. *To examine the command* for cardiovascular diseases, from Camp Greene, Lieut. A. SUMMERS, Chicago.
To Camp Jackson, S. C., from Camp Sevier, Lieut. W. J. RILEY, Chicago.
To Camp Meade., Md., base hospital, Lieut. W. A. DANIELSON, La Grange.
To Camp Sherman, Ohio, base hospital, from Camp Shelby, Capt. J. A. KOCH, Quincy.
To Camp Travis, Texas, from Grand Forks, Lieut. J. H. McINTOSH, Chambersburg.
To Chicago, Ill., from Camp. A. A. Humphreys, Lieut. H. S. EDSON, Chicago; from Camp Sheridan, Lieut. M. F. McGUIRE, Chicago; from Fort Oglethorpe, Lieut. G. L. McWHORTER, Chicago.
To Fort Des Moines, Iowa, from Camp Shelby, Capt. W. A. PLICE, Chicago.
To Fort Sheridan, Ill., from Camp Jackson, Lieut. E. J. BERKHEISER, Aurora.
To Fort Snelling, Minn., from Camp Dodge, Capt. D. L. SCHRAM, Chicago.
To Fort Thomas, Ky., from Fort Des Moines, Lieut. M. O'HEARN, Chicago.
To Fort Warren, Mass., from Camp Zachary Taylor, Lieut. H. I. TWISS, Chicago.
To Jefferson Barracks, Mo., from Camp Grant, Capt. E. SARGENT, Moline.
To Lakewood, N. J., from the Surgeon-General's Office, Lieut. D. C. SUTTON, Chicago.
To Millington, Tenn., Park Field, as flight surgeon, from Americus, Capt. D. R. SCOTT, Macomb.
To Mineola, N. Y., Hazelhurst Field, from Millington, Capt. F. E. BRAWLEY, Chicago.
To Newport News, Va., from Oteen, N. C., Lieut. C. H. CONNOR, Chicago.
To Otisville, N. Y., from Camp Lee, Lieut. C. E. PITTE, Chicago.
To Pittsburgh, Pa., from Boston, Capt. B. H. MOORE, Chicago.
To Rockefeller Institute, from Camp Dix, Lieut. K. W. WAHLBERG, Moline. For instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. W. S. CULPEPPER, St. Louis. For instruction in the treatment of infected wounds, and on completion *to his proper station*, from Fort Des Moines, Lieut. G. W. COX, Litchfield; from Fort Riley, Capt. W. H. PERRY, Sterling.
To San Antonio, Texas, Kelly Field, from Mineola, Capt. H. E. MIZE, Chicago.
To San Francisco, Calif., from Vancouver Barracks, Capt. R. B. MILLER, Rock Island.
To Washington, D. C., from Fort Oglethorpe, Col. C. H. S. WILLIAMSON, Chicago; from Rockefeller Institute, Capt. W. E. POTTER, Oak Park
The following order has been revoked: *To Fort Snelling, Minn.*, from Fort Sheridan, Lieut. H. B. THOMAS, Chicago.

Indiana

To Boston, Mass., from Camp Wadsworth, Lieut. M. B. GUTHRIE, Bedford.
To Camp Abraham Eustis, Va., base hospital, from Camp Joseph E. Johnston, Capt. B. VAN SWERINGEN, Fort Wayne.
To Camp Pike, Ark., from Camp MacArthur, Lieut. I. H. SONNE, Corydon.
To Camp Travis, Texas, from Fort Des Moines, Capt. L. Z. BREAKS, Terre Haute.
To Chicago, Ill., from Camp Sherman, Capt. J. R. GILLUM, Terre Haute.
To Fort Bayard, N. H., from Camp Hancock, Capt. N. W. CLARK, Rossville.
To Hoboken, N. J., from Fort Oglethorpe, Lieut. H. E. STEINMAN, Monroeville.

Iowa

To Army Medical School, from Camp Dix, Capt. W. F. CARVER, Fort Dodge.
To Boston, Mass., from Camp Devens, Lieut. J. M. MANSFIELD, Iowa City.
To Camp Beauregard, La., base hospital, from Camp Wheeler, Capt. H. R. REYNOLDS, Clinton.
To Camp Devens, Mass., base hospital, from New Haven, Major G. McCONNELL, Waterloo.
To Camp Travis, Texas, from Camp Cody, Lieut. W. P. SHERLOCK, Keokuk.
To Fort Rosecrans, Calif., from Vancouver Barracks, Lieut. E. E. RICHARDSON, Webster City.
To Key West Barracks, Fla., from Camp Meade, Capt. E. A. BARE, Pleasantville.
To report to the Commanding General, Western Department, from San Francisco, Major A. V. HENNESSY, Council Bluffs.

Kansas

To Chicago, Ill., from Camp Dodge, Capt. C. A. PARKER, Maize.
To Eastview, N. Y., from Camp Pike, Lieut. G. A. KING, Maplehill.
The following order has been revoked: *To Fort Riley*, base hospital, from Camp Devens, Capt. D. I. MAGGARD, Wichita.

Kentucky

To Camp Lee, Va., from Camp Zachary Taylor, Major F. H. MILLS.
To Chicago, Ill., from Fort Wayne, Lieut. A. V. JONES, Louisville.
The following order has been revoked: *To Carlisle, Pa.*, from Camp Knox, Lieut. P. K. SAUER.

Louisiana

To Camp Bowie, Texas, as tuberculosis examiner, from Camp McClellan, Lieut. B. R. HENINGER, New Orleans.
To Camp Logan, Texas, from Camp Shelby, Lieut. M. J. GELPI, New Orleans.

Maine

To Carlisle, Pa., from Army Medical School, Capt. R. V. BLISS, Bangor.

Maryland

To Army Medical School from Camp Dix, Lieuts. W. H. JENKINS, D. SILBERMAN, Baltimore.
To Camp A. A. Humphreys, Va., as camp surgeon, from Camp Meade, Lieut.-Col. G. L. QUALLS.
To Camp Gordon, Ga., base hospital, from Camp Joseph E. Johnston, Capt. T. P. SPRUNT, Baltimore.
To Camp Greene, N. C., base hospital, from Camp Wadsworth, Lieut. V. L. MAHONEY, Catonsville.
To Camp Lee, Va., base hospital, from Camp Meade, Lieut. G. R. MICKLETWAITE, Baltimore.
To Camp McClellan, Ala., to examine the command for nervous and mental diseases, from Camp Forrest, Lieut. F. N. OGDEN, Baltimore.
To Fort Meyer, Va., from Camp Meade, Capt. C. W. WEST, Baltimore.
To Fort Oglethorpe, from Camp Greene, Lieut. M. RASKIN, Baltimore.
To Fort Porter, N. Y., from Camp Custer, Lieut. H. G. JOHNSON, Baltimore.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Fort Des Moines, Lieut. T. S. MOISE, Baltimore.
The following order has been revoked: *To Fort Snelling, Minn.*, from Cape May, Lieut. J. H. BAIRD, Baltimore.

Massachusetts

To Army Medical School, from Plattsburg Barracks, Lieut. M. B. RADDING, Springfield. For instruction, from Camp Abraham Eustis, Major E. A. CODMAN, Boston.
To Biltmore, N. C., from Camp Wadsworth, Lieut. L. C. HAVENS, Cambridge.
To Camp Amatol, N. J., from Army Medical School, Lieut. J. E. DEMPSEY, Newton.
To Camp Logan, Texas, base hospital, from Camp Wheeler, Capt. R. B. OBER, Springfield.
To Camp Meade, Md., base hospital, from Fort Myer, Lieut. H. W. ELLAM, Gardner. *To examine the command* for nervous and mental diseases, from Camp Greene, Lieut. F. P. MOORE, East Norfolk.
To Camp Sevier, S. C., to examine the command for nervous and mental diseases, from Fort McHenry, Lieut. D. B. COLEMAN, Wellesley.
To Camp Zachary Taylor, Ky., base hospital, from Army Medical School, Major E. A. CODMAN, Boston.
To Detroit, Mich., from Boston, Lieut. T. S. MEBANS.
To Eastview, N. Y., from Fort Oglethorpe, Lieut. G. L. CHAFFIN, Boston.

To Fort Benjamin Harrison, Ind., from Hoboken, Lieut. W. A. MACINTYRE, Worcester.
To Fort McPherson, Ga., from Fort Sam Houston, Lieut. C. W. FINNERTY, Sommerville.
To Garden City, N. Y., from Mineola, Lieut. T. F. CAPELES, Haverhill.
To Governors Island, N. Y., from Boston, Major F. R. ILSLEY, Medford.
To Markleton, Pa., from Fort Thomas, Lieut. H. M. STEWART, Pittsfield.
To Mineola, N. Y., Hazelhurst Field, as flight surgeon, from Long Island, Lieut. L. R. BURNETT, Cambridge.
To Oteen, N. C., from Camp Sevier, Lieut. N. J. HEYWOOD, Williamsett.
To Plattsburg Barracks, N. Y., from Camp Greene, Capt. H. L. STICK, Baldwinsville.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major F. W. PEABODY, Boston.
The following order has been revoked: *To Fort Ontario, N. Y.*, Major R. J. R. CAINES, Boston.

Michigan

To Arcadia, Calif., Army Balloon School, from San Diego, Major H. S. BARTHOLOMEW, Lansing.
To Camp Travis, Texas, from Fort Crook, Lieut. R. R. ENSOR, Detroit.
To Detroit, Mich., from Walter Reed General Hospital, Lieut. F. H. COLE, Detroit.
To Fort Oglethorpe, from Camp Forrest, Major H. L. ARNOLD, Owosso.
To Fort Sam Houston, Texas, to examine the command for nervous and mental diseases, from Fort Riley, Lieut. H. P. GOTFREDSEN, Lowell.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Detroit, Mich.*, from Fort Oglethorpe, Lieut. J. W. WARREN, Detroit.

Minnesota

To Camp Grant, Ill., as orthopedic surgeon, from Fort Snelling, Lieut. E. O. SWANSON, St. Paul. Base hospital, from Camp Dodge, Capt. A. H. PARKS, Minneapolis.
To Camp Lee, Va., base hospital, from Camp Zachary Taylor, Capt. C. A. LESTER, Winona.
To Camp McClellan, Ala., base hospital, from Camp Jackson, Capt. G. R. EUSTERMAN, Rochester.
To Camp Travis, Texas, from Fort Omaha, Lieut. K. DEDOLPH, St. Paul.
To Fort Snelling, Minn., from Boston, Lieut. M. A. DESMOND, Glenwood.
The following orders have been revoked: *To Fort Des Moines, Iowa*, Capt. J. L. CRENSHAW, Rochester; from Rockefeller Institute, Lieut. J. R. McVAY, Rochester.

Mississippi

To Camp McClellan, Ala., base hospital, from Camp Shelby, Lieut. C. E. MULLENS, Natchez.
To Fort McHenry, Md., from Camp Sherman, Lieut. D. C. MONTGOMERY, Greenville.
To Newport News, Va., from Fort Oglethorpe, Lieut. H. E. GRIFFIN, Coffeeville.

Missouri

To Aberdeen, Md., from Cincinnati, Capt. J. MIDDLETON, Kansas City.
To Army Medical School, from Camp Dix, Lieut. R. JOHNSON, St. Louis.
To Camp Dodge, Iowa, base hospital, from Rockefeller Institute, Lieut. J. C. DONAHUE, St. Louis.
To Camp Grant, Ill., base hospital, from Camp Zachary Taylor, Capt. W. H. GENTRY, Carthage.
To Camp Meade, Md., to examine the command for nervous and mental diseases, from Plattsburg Barracks, Lieut. J. F. McFADDEN, St. Louis.
To Camp Travis, Texas, from Fort Omaha, Lieut. H. H. HUGHART, St. Louis.
To Chicago, Ill., from Camp Dodge, Capt. P. S. TATE, Farmington; H. L. MONTAGUE, St. Louis.
To Fort Riley, from Camp Dix, Lieut. G. G. KAEMMERLING, Joplin.
To Fort Sheridan, Ill., from Camp Dodge, Lieut. E. E. HEIN, St. Louis.
To Hoboken, N. J., from Fort Sill, Lieut. L. SANTE, St. Louis.
To Jefferson Barracks, Mo., from Camp Kearney, Lieut.-Col. M. P. RAVENAL, Columbia.
To Madison Barracks, N. Y., from Rockefeller Institute, Capt. J. M. DEAN, St. Louis.
To Newport News, Va., from Biltmore, Capt. C. R. BUREN, Princeton.
To Plattsburg Barracks, N. Y., from Madison Barracks, Major G. E. SCRUTCHFIELD, Marshall.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Jefferson Barracks, Mo.*, from Fort Riley, Lieut. J. H. ARMSTRONG, Glendale.

Montana

To Fort Snelling, Minn., from St. Paul, Capt. P. L. ASHLEY, Wibaux.

Nebraska

To Army Medical School, from Camp Dix, Capt. A. D. MUNGER, Lincoln.
To Camp Travis, Texas, from Fort Sill, Capt. C. MINNICK, Curtis.

New Hampshire

To Boston, Mass., from Fort Oglethorpe, Major J. A. DREW, Rumney.
To Camp Lee, Va., base hospital, from Camp Sheridan, Lieut. D. L. BLACK, Nashua.
To Fort Williams, Me., from Camp Dix, Capts. G. D. TIBBETTS, Bennington; B. P. BURPEE, Manchester.

New Jersey

To Biltmore, N. C., from Camp Dodge, Lieut. B. M. HANCE, Boonton.
To Boston, Mass., from Fort Oglethorpe, Lieut. J. H. WHITICAR, Ocean City.
To Camp Devens, Mass., from Watertown Arsenal, Capt. G. B. VERBECK, Caldwell.
To Camp Dix, N. J., from Camp Jackson, Lieut. W. F. COSTELLO, Dover.
To Camp Dodge, Iowa, base hospital, from Camp McClellan, Lieut. J. S. MARK, Chrome.
To Camp Sherman, Ohio, base hospital, from Camp Zachary Taylor, Capt. N. W. CURRIE, Plainfield.
To Oteen, N. C., from Camp Sevier, Lieut. E. N. COWAN, Merchantsville.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major S. PATON, Princeton.
The following order has been revoked: *To Madison Barracks, N. Y.*, from Pittsburgh, Capt. R. D. BAKER, Summit.

New Mexico

To Denver, Colo., from Camp Dodge, Capt. B. E. HEDDING, Santa Fe.

New York

To Arcadia, Fla., Dorr Field, from St. Paul, Capt. E. C. LYON, New York.
To Army Medical School, for instruction, from Hoboken, Capt. J. L. DONHAUSER, Albany.
To Biltmore, N. C., from Rockefeller Institute, Col. A. E. BRADLEY.
To Boston, Mass., from Fort Oglethorpe, Lieut. R. L. CUDLIPP, New York.
To Butte, Mont., from Detroit, Capt. E. E. GILLICK, Niagara Falls.
To Camp Dix, N. J., base hospital, from Camp Hancock, Lieut. J. GOLOMB, New York.
To Camp Forrest, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. S. BRODY, New York.
To Camp Grant, Ill., to examine the command for cardiovascular diseases, from Camp Greene, Lieut. W. B. HUNTLEY, New York.
To Camp Lee, Va., base hospital, from Camp Sevier, Lieut. W. W. TPACEY, New York.
To Camp Meade, Md., as orthopedic surgeon, from the Surgeon-General's Office, Major A. H. PARSONS, Great Neck.
To Camp Shelby, Miss., base hospital, from Camp Jackson, Capt. E. A. STAPLETON, Albany.
To Camp Upton, N. Y., base hospital, from Edgewood, Md., Capt. J. H. McCORT, Sag Harbor; from Fort Oglethorpe, Major K. F. RUBERT, Owego.
To Camp Wheeler, Ga., base hospital, from Camp Hancock, Lieut. J. E. WINDBIEL, Amsterdam.
To Carlisle, Pa., from Camp Sevier, Capt. C. A. LUBRECHT, Brooklyn.
To East Norfolk, Mass.; from Camp Joseph E. Johnston, Capt. E. C. GILBERT, Bridgehampton; from New Haven, Lieut. S. KOROWITZ, New York.
To Eastview, N. Y., from Otisville, Capt. C. R. BAKER, Kingston.
To Everman, Texas, Barron Field, from Lonoke, Major S. M. STRONG, New York.
To Fort Logan H. Roots, Ark., from Camp Gordon, Capt. C. H. SANFORD, New York.
To Fort McHenry, Md., from Camp Dix, Capt. G. H. CROT, New York; from Fort Oglethorpe, Capt. J. H. KEVAND, Syracuse.
To Fort Ontario, N. Y., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. V. J. JACOBSON, Mineola.
To Fort Porter, N. Y., from Rochester, N. Y., Capt. W. B. JONES, Rochester.
To Fort Sam Houston, Texas, base hospital, from Camp McClellan, Capt. S. ERDMAN, New York.
To Fort Sheridan, Ill., from Camp Crane, Lieut. R. W. MOODY, Middletown; from Lakewood, Lieut. H. T. HYMAN, New York.
To Fort Sill, Okla., from Camp Joseph E. Johnston, Lieut. M. B. SHARKEY, Syracuse.
To Fort Warren, Mass., from Camp Dix, Major H. D. COCHRANE, Albany; Capt. G. F. CAHILL, New York.
To Fort Wayne, Mich., from Fort Omaha, Capt. M. R. WALTER, New York.
To Garden City, N. Y., from Wichita Falls, Capt. S. A. MUNFORD, Ithaca.
To Hoboken, N. J., from Camp Dix, Capt. H. S. PASCAL, New York; from Camp Sevier, Lieut. J. E. SHORT, Buffalo.
To Long Beach, N. Y., from Fort Ontario, Lieut. S. TRIPLER, Oswego.
To New Haven, Conn., from Fort Oglethorpe, Lieut. W. M. O'CONNELL, New York.
To Newport News, Va., from Biltmore, N. C., Lieut. R. S. BREAKEY, Monticello.
To Norfolk, Va., from Fort Oglethorpe, Capt. E. J. PHILLIPS, Corfu.
To Oteen, N. C., from Camp Sevier, Lieut. B. C. BULLEN, New York.
To Otisville, N. Y., from Camp Abraham Eustis, Capt. F. ARGUS, Buffalo; from Camp Zachary Taylor, Lieut. M. A. SAGER, New York.
To Pittsburgh, Pa., from Camp Sheridan, Capt. L. M. WILBOR, Jasper.
To Rochester, Minn., Mayo Clinic, for instruction, from Camp Crane, Capt. G. E. STANBRO, Springville.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Rochester, Minn.*, Mayo Clinic, for instruction, from Williamsbridge, Major D. L. WINN.
To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. E. S. AMSLER, Rochester.
To Washington, D. C., Surgeon-General's Office, from Colonia, N. J., Capt. W. H. VEEDER, Rochester; from Hoboken, Lieut.-Col. A. E. COHN, New York. On completion *to Camp Lee, Va.*, base hospital, from Camp Meade, Capt. E. W. BROWN, Mount Kisco.
To West Baden, Ind., from Otisville, Lieut. L. SASOVER, New York.
To Williamsbridge, N. Y., from Army Medical School, Lieut. H. T. CARTWRIGHT, New York.
The following orders have been revoked: *To Camp Meade, Md.*, from Fort Oglethorpe, Capt. C. POTTER, Syracuse. *To Camp Shelby, Miss.*, base hospital, from Camp Wheeler, Lieut. L. M. KELLEY, Manchester Center. *To Fort Oglethorpe*, from Camp Crane, Major J. E. CONBOY, New York.

North Carolina

To Camp Gordon, Ga., base hospital, from Camp Joseph E. Johnston, Lieut. C. M. VAN POOLE, Salisbury.
To Camp Jackson, S. C., base hospital, from Camp Joseph E. Johnston, Capt. A. C. CAMPBELL, Raleigh.
To Camp Lee, Va., from Camp Greene, Major G. C. BEACH, Jr.
To Fort Oglethorpe, from Camp Forrest, Capt. L. H. WEBB, Chapel Hill.
To Oteen, N. C., from Otisville, Lieut. J. W. WILLCOX, Laurel Hill.
To Washington, D. C., from Camp Sevier, Lieut.-Col. B. R. HUNTER, Charlotte. Surgeon-General's Office, for instruction, from Camp Dix, Capt. C. W. BANNER, Greensboro.

Ohio

To Aberdeen, Md., from Camp Joseph E. Johnston, Lieut. W. N. TAYLOR, Columbus; from Camp Meade, Capt. S. A. EDWARDS, Middlepoint.
To Camp A. A. Humphreys, Va., base hospital, from Camp Greene, Cant. H. S. HAYES, Whitehouse.
To Camp Dodge, Iowa, from Camp MacArthur, Lieut. A. V. SIBERT, Lima.
To Camp Meade, Md., base hospital, from Camp Sherman, Major R. H. BIRGE, Cleveland.
To Camp Travis, Texas, from Fort Sill, Lieut. A. J. SHOEMAKER, Columbus; from San Antonio, Lieut. J. M. PUMPHREY, Mount Vernon.
To Carlisle, Pa., from Fort Sheridan, Lieut. R. E. STEPFIELD, Barberton.
To Chicago, Ill., from Fort Wayne, Mich., Lieut. L. C. NEISWANDER, Ada.
To Dayton, Ohio, McCook Field, from Belleville, Capt. C. O. BAYLESS, Dayton.
To Detroit, Mich., from Camp Zachary Taylor, Lieut. J. H. CHALAT, Cleveland.
To Eastview, N. Y., from Camp Grant, Capt. W. A. MEDLIN, Cleveland
To Erie Proving Ground, Ohio, from Detroit, Lieut. E. SHELDON, Bloomdale.
To Fort McHenry, Md., Major G. C. SCHAEFFER, Columbus; from Camp Sevier, Capt. S. W. EVANS, Cleveland.
To Newport News, Va., from Biltmore, N. C., Capt. H. J. AUSTIN, Geneva.
To Otisville, N. Y., from Camp Grant, Capt. J. M. ULRICH, Akron.
To Penniman, Va., from Camp Lee, Lieut. L. V. BATES, Columbus.
To Pittsburgh, Pa., from Camp Sheridan, Capt. H. M. TARR, Cleveland.
To Washington, D. C., Surgeon-General's Office, from Camp Greene, Cant. H. B. BLAKEY, Columbus.
The following orders have been revoked: *To Dansville, N. Y.*, from Fort Oglethorpe, Lieut. J. R. CRAWLEY, Athens. *To Fort Leavenworth, Kan.*, from Fort Oglethorpe, Lieut. W. H. VORBAU, Lima.

Oklahoma

To Army Medical School, from Camp Dix, Capt. E. E. RICE, Shawnee.
To Camp Travis, Texas, from Camp Bowie, Capt. P. GARDNER, Hoilevville.
To Fort Leavenworth, Kan., from Fort Riley, Lieut. H. M. REEDER, Shawnee.
To Fort Oglethorpe, from Camp Forrest, Lieut. L. A. MITCHELL, Frederick.

Oregon

To Fort McDowell, Calif., from Fort Oglethorpe, Capt. W. C. MUNLY, Portland.
To Fort McHenry, Md., Major J. M. WAUGH, Hood River.
To San Francisco, Calif., from Vancouver Barracks, Capt. E. MINGUS, Marshfield.

Pennsylvania

To Army Medical School, from Camp Dix, Capt. J. D. LEWIS, Scranton; Lieut. R. H. JEFFREY, Uniontown.
To Camp Custer, Mich., from Detroit, Lieut. R. W. WATTERSON, Darlington.
To Camp Devens, Mass., from New Haven, Capt. J. LEIDY, Philadelphia. Base hospital, from Camp Wadsworth, Lieut. R. H. PEARLMAN, Pittsburgh.
To Camp Dix, N. J., Lieut. J. H. McCUTCHEON, Philadelphia.
To Camp Grant, Ill., base hospital, from Detroit, Capt. A. R. MATHENY, Pittsburgh.
To Camp Jackson, S. C., from Camp Sevier, Major A. E. DAVIS, Scranton.
To Camp Leach, D. C., from Army Medical School, Lieut. D. B. COOLEY, Pottstown.
To Camp Meade, Md., base hospital, from Fort Sheridan, Lieut. F. J. GABE, Reading. To examine the command for nervous and mental diseases, from Dansville, N. Y., Lieut. J. P. BOYLE, Philadelphia.
To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. H. G. CARMALT, Pittsburgh.
To Camp Travis, Texas, from Camp Wadsworth, Capt. E. H. SLOAN, Ben Avon; from San Antonio, Capt. W. S. SHIMER, Philadelphia.
To Cape May, N. J., from Camp Lee, Lieut. E. P. LONGAKER, Philadelphia.
To Detroit, Mich., from Fort McHenry, Major G. C. BOUGHTON, Erie.
To Fort McHenry, Md., from Camp Sheridan, Lieut. P. C. EISMAN, Philadelphia; from Camp Wheeler, Capt. C. B. NOECKER, Scranton.
To Fort Oglethorpe, from Camp Forrest, Major C. M. STROTZ, Philadelphia.
To Fort Riley, base hospital, from Camp Zachary Taylor, Lieut. J. E. GROSS, Pittsburgh.
To Hoboken, N. J., from Long Beach, N. Y., Lieut. D. L. SIMON, Pittsburgh.
To Newport News, Va., from Biltmore, N. C., Lieut. M. B. BERNARD, Philadelphia; from Camp Jackson, Capt. S. A. METHENY, Philadelphia; from Fort McPherson, Lieut. W. S. BELL, Greensburg; from Fort Oglethorpe, Lieut. R. L. ELLIS, York.
To San Diego, Calif., Rockwell Field, from Camp Polk, Major A. W. YALE, Philadelphia.
To Walter Reed General Hospital, D. C., from Colonia, Lieut.-Col. A. P. C. ASHHURST, Philadelphia; from Fort Oglethorpe, Lieut. W. C. SHEEHAN, Erdenheim.
To Washington, D. C., Surgeon-General's Office, from Fort Oglethorpe, Lieut.-Col. W. F. MANGES, Philadelphia.
To Waynesville, N. C., from Camp Meade, Capt. A. TRASOFF, Philadelphia.
The following order has been revoked: *To Fort Hancock, Ga.*, from Fort Benjamin Harrison, Capt. E. H. PERRY, Washington.

Rhode Island

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. P. APPLETON, Providence.

South Carolina

To Fort McHenry, Md., from Fort Oglethorpe, Capt. C. M. RAKESTRAW, Rock Hill.

South Dakota

To Fort Snelling, Minn., from Camp Dix, Capt. W. D. FARRELL, Aberdeen; from Camp Joseph E. Johnston, Lieut. L. J. BROOKMAN, Vermilion.
To San Francisco, Calif., from Vancouver Barracks, Lieut. F. T. READ, South Shore.

Tennessee

To Army Medical School, from Camp Forrest, Lieut. E. L. HOOPER, Cordova.
To Camp Meade, Md., base hospital, from Dansville, Lieut. R. H. DENHAM, Lynnville.
To Camp Upton, N. Y., base hospital, from Camp Sevier, Lieut. C. P. WALLER, Woodbine.
To Fort Dade, Fla., from Camp John Wise, Lieut. F. J. O'CONNOR, Jackson.
To San Francisco, Calif., from Vancouver Barracks, Lieut. H. W. ALLAN, Knoxville.
The following order has been revoked: *To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, for instruction, from Fort Oglethorpe, Lieut. B. L. JACOBS, Chattanooga.

Texas

To Camp Gordon, Ga., from Camp Wheeler, Capt. S. L. BOREN, Del Rio.
To Camp Grant, Ill., base hospital, from Camp Logan, Lieut. E. R. EASTON.
To Camp Logan, Texas, from Camp MacArthur, Major H. C. BIFRROWER.
To Camp Travis, Texas, from Camp Bowie, Capts. T. R. BURNETT, Carrollton; C. D. DIXON, San Antonio; from Camp Devens, Capt. B. F. STEVENS, El Paso.
To Camp Upton, N. Y., base hospital, from Camp Sevier, Lieut. C. P. WALLER, Woodbine.
To Denver, Colo., from Camp Abraham Eustis, Lieut. R. K. STACEY, Mirerva.
To Fort Logan H. Roots, Ark., from Camp Logan, Lieut.-Col. C. M. WALSON.
To Fort McHenry, Md., from Camp Joseph E. Johnston, Major G. HAMILTON, Houston.
To Fort Sam Houston, Texas, from Camp Meade, Capt. H. D. WHITTINGTON, Eastland. Base hospital, from Camp Travis, Capt. W. W. SAMUELL, Dallas; from Rockefeller Institute, Lieut. M. S. SEELY, Wortham.
To Jefferson Barracks, Mo., from Camp Zachary Taylor, Major A. C. McDANIEL, San Antonio.
To Newport News, Va., from Fort McPherson, Lieut. J. W. MACUNE, Davilla.
To Waynesville, N. C., from Fort Oglethorpe, Lieut. W. C. COLBERT, Chicota.

Utah

To Fort Des Moines, Iowa, from Fort Riley, Lieut. F. F. HATCH, Salt Lake City.
To Fort Douglas, from Camp Sevier, Lieut. G. A. LIGHT, Salt Lake City; from Fort Logan, Capt. G. W. CLARKE, Springville.
To Long Beach, N. Y., from Fort Riley, Capt. H. B. FORBES, Ogden.

Virginia

To Camp Lee, Va., base hospital, from Camp Devens, Lieut. J. W. DEVINE, Lynchburg.
To Cape May, N. J., from the Surgeon-General's Office, Major C. C. COLEMAN, Richmond.
To Fort Monroe, Va., from Camp Dix, Major B. HILLSMAN, Richmond.
To Fort Warren, Mass., from Camp Lee, Lieut. W. COX, Winchester.

Washington

To Camp Lewis, Wash., from Vancouver Barracks, Capt. C. C. BENEDICT, Seattle.
To Camp Travis, Texas, from Chicago, Lieut. H. MARTIN, Cashmere.
To Vancouver Barracks, Wash., from Camp Lewis, Lieut. L. S. DEWEY, Okamogan.

West Virginia

To Newport News, Va., from Biltmore, N. C., Lieut. J. A. BAKER, Shirley.
The following order has been revoked: *To Army Medical School* for instruction, from Camp Grant, Lieut. L. E. DAUGHERTY, Davis.

Wisconsin

To Aberdeen, Md., from Lee Hall, Va., Lieut. E. C. PFEIFER, Sheybogan Falls.
To Camp Beauregard, La., from Camp MacArthur, Lieut. W. T. McNAUGHTON, Milwaukee.
To Chicago, Ill., from Fort Oglethorpe, Lieut H. O. JONES, Denison.
To Fort Biscum, Alaska, from Fort Riley, Lieut. R. F. FITCH, Tomah.
To San Francisco, Calif., from Vancouver Barracks, Capt. H. A. FULTON, Eau Clair.

Wyoming

To Chicago, Ill., from Camp Dodge, Lieut E. E. DALE, Lusk.
To Everman, Texas, Barron Field, from Wichita Falls, Lieut. J. T. McBRIDE, Dayton.

UNITED STATES PUBLIC HEALTH SERVICE

Surg. J. W. KERR, upon request of Governor of New Mexico, proceed to Santa Fe for conference relative to address on public health.

Passed Asst. Surg. J. R. RIDLON, relieved at Anniston, Ala., proceed to Fort Stanton, N. M., for duty.

Passed Asst. Surg. W. C. WITTE, proceed to Lincoln, Neb., on special temporary duty.

Asst. Surg. P. M. STEWART, proceed to Ronda, Wilkes County, N. C., to investigate alleged outbreak of influenza. Relieved at Charlotte, N. C., proceed to marine hospital, Stapleton, N. Y.

Asst. Surg. R. R. SPENCER, relieved at Great Lakes Training Station, proceed to marine hospital, St. Louis, Mo., for temporary duty.

Asst. Surg. C. R. ESKEY, relieved at Montgomery, Ala., and from temporary duty at the Savannah Quarantine Station. Proceed to the Reedy Island Quarantine Station for duty.

Asst. Surg. THOMAS PARRAN, Jr., proceed to Cullman, Ala., for duty in outbreak of smallpox.

Acting Asst. Surg. G. D. HEATH, Jr., report at Hygienic Laboratory for temporary duty in connection with studies relating to the prophylactic value of antipneumococcus lipovaccines.

Acting Asst. Surg. SAMUEL LICHTENSTEIN, relieved at Raleigh, N. C., proceed to Columbia, S. C., for duty in extracantonment sanitation.

Acting Asst. Surg. S. M. WEYER, proceed to East Las Vegas, N. M., for duty in connection with influenza control.

San. Engineer C. K. HARRUB, proceed to Alexandria, Va., for temporary duty in assisting in the preparation of plans for the construction of sewers.

San. Engr. H. H. WAGENHALS, proceed to Atlanta, Ga., for conference with local authorities in reference to venereal disease control.

Scientific Asst. GEORGE E. McILROY, proceed to New Haven, Conn., for intensive studies in industrial sanitation preparatory to proceeding to Philadelphia, Pa., for duty.

Scientific Asst. MYRON A. BANTRELL, proceed to Philadelphia, Pa., for duty in industrial sanitation.

Scientific Asst. W. H. PRICE, relieved from duty in the District of Columbia, proceed to Anniston, Ala., for conference concerning the milk situation.

Scientific Asst. HENRY W. G. SHYTLES, proceed to Orange, Texas, for duty in connection with shipyard community sanitation.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. Charles F. Carnes, Kosciusko, Miss., is reported to be seriously ill in Memphis as the result of an attack of cerebral hemorrhage.

New Officers.—At the annual meeting of the Union County Medical Society at Eldorado, Dr. William N. Elkins, Junction City, was elected president; Dr. W. H. Myers, vice president, and Dr. H. H. Niehuss, Eldorado, secretary-treasurer. ——At the annual meeting of the Jefferson County Medical Society, held in Pine Bluff, Dr. James M. Lemons was elected president; Dr. William Breathwit, vice president, and Dr. John T. Palmer, secretary-treasurer, all of Pine Bluff.——Pulaski County Medical Society held its annual meeting in Little Rock and elected Dr. Caleb E. Witt, president; Dr. Elmer M. Hudson, vice president; Dr. John B. Dooley, secretary, and Dr. William R. Bathurst, treasurer, all of Little Rock.

ILLINOIS

Personal.—Dr. John D. Colt, Litchfield, dean of physicians of Montgomery County, celebated his eightieth birthday anniversary, January 12.——Dr. Bretislav L. Vilna, Cicero, was attacked, January 24, by three men, who robbed him of his automobile.

Addition to Epileptic Colony.—It is announced that the state epileptic colony, Dixon, is to be enlarged with new buildings mostly of the cottage type, and that 700 patients from Lincoln and other state institutions are to be transferred to the colony.

Revision of Nursing Course.—More than 100 members of the First District Nursing Association met, January 21, at the call of the president, Edna L. Foley, to discuss the proposed legislation providing for the revision of the nursing course, and adoption of the registry system. The body recommended the following improvements in the present situation: The establishment of two courses of registered nurses in the state, the first the graduate nurse with three years' training, and the second the junior registered nurse with one year's training; compulsory licensing of every person engaged in the care of the sick; a three years' training course for graduate nurses, a one year's course for junior registered nurses, and the introduction into high schools of a one year compulsory course in home nursing service for all girl students.

Chicago

Base Hospital Soon to Return.—It is announced that orders to return home have been received by Base Hospital No. 11, and the organization will probably be home this month. The hospital has been located at Nantes and has been under the surgical direction of Nelson M. Percy, Lieutenant-Colonel, M. C., U. S. Army, and under the medical direction of George F. Dick, Major, M. C., U. S. Army.

Personal.—Harry D. Orr, Lieutenant-Colonel, M. C., U. S. Army, formerly surgeon of the First Cavalry, Ill. N. G., has recently been made division surgeon of the Thirty-Third Division, which is now on duty on the Rhine premises.——Robert B. Preble, Lieutenant-Colonel, M. C., U. S. Army, returned home, February 2, after seven months' service in France.——Allen B. Kanavel, Lieutenant-Colonel, M. C., U. S. Army, reached Boston on his return home from France, January 22.——Dr. William Blanchard has been exonerated in the case of the death of Clara Schultz, who was killed by the physician's automobile, January 23.——Dr. William A. Evans has been appointed medical adviser of the special commission appointed, January 24, to recommend improvements in the standards and feeding of children in Chicago public schools.

Red Cross Thanks Physicians.—At the meeting of the Chicago Medical Society, January 29, the work of the Chicago chapter of the American Red Cross was described by Mr. Marquis Eaton, its chairman. He states that physicians had donated services estimating to $200,000 to members of soldiers' families requiring medical aid. The Chicago chapter has accomplished the establishment of four base hospitals, the equipment of sixty-nine ambulances, the recruiting of two ambulance companies, the shipment of more than $4,000,000 worth of medical supplies overseas, and the furnishing of medical aid to 18,000 soldiers and their families. More than 12,000 persons have been instructed by the Red Cross in first aid, and more than 500,000 soldiers have been given the benefit of the canteen service. During the recent influenza epidemic, 1,000 nurses were provided by the Red Cross for influenza victims in emergency cases. He announces that the Red Cross intends to keep an emergency storage and equipment for 1,000 cases to be used in the event of epidemics or other emergencies.

IOWA

New Health Bill Drafted.—Dr. Guilford H. Sumner, Des Moines, secretary of the state board of health, conferred with a committee of legislature, January 21, relative to placing a bill before that body relative to venereal disease. The bill provides, first, authority for local boards to make investigation in regard to the prevalence of social diseases, and second, authority to make inspection, examination, and quarantine of those afflicted with such disease.

To Require Admission of Influenza Cases.—At Waterloo the city board of health by mandamus sought to require St. Francis Hospital to admit cases of influenza, which had been refused by the hospital authorities during the epidemic of influenza. The hospital authorities obtained an injunction restraining the board from taking patients to the hospital. The matter is now under settlement in the courts, a hearing in the matter on the mandamus and the injunction having been held, January 8, before Judge C. W. Mullan. At the hearing local physicians and experts from Chicago were heard in connection with the transmissibility of the disease. The Sisters who run the hospital claim that it is not adapted to take contagious cases and they could be admitted only at the serious risk of the other patients.

Personal.—Dr. James M. Barstow, Council Bluffs, who has served for twenty years as medical member of the Insanity Commission of Council Bluffs Division of the District Court, has been reappointed for a two-year term.——Dr. Charles S. Grant, Iowa City, has been appointed a member of the state board of health, to succeed Dr. Edwin E. Harris, Grinnell, who has moved to Boulder, Colo.——Dr. Dennis F. Fitzpatrick, Iowa City, has been appointed physician of Johnson County, to succeed Dr. John G. Mueller, deceased.——The home of Dr. John M. Sturdivant, Cincinnati, was destroyed by fire, January 4.——Dr. Alexander Crawford, Mount Vernon, announces his retirement from practice at the beginning of the year.——Dr. Frank C. Titzell, Iowa City, has been appointed a member of the Harvey (N. D.) Hospital.

LOUISIANA

Superintendent Changes Station.—Dr. Robert S. Curry, New Orleans, who resigned as superintendent of the Mississippi State Institution of the Blind to engage in special work for the state board of health, has been elected superintendent of the Baptist Hospital, New Orleans.

Society Election.—At the annual meeting of the Medical Society of Orleans Parish, the following officers were elected: president, Dr. Hector E. Bernadas; vice presidents, Drs. Wallace J. Durel and Allen C. Eustis; secretary, Dr. Lucian H. Landry, and treasurer, Dr. Foster M. Johns, all of New Orleans.

MARYLAND

Personal.—Seized by two negroes as he was crossing an alley on Chase Street, late Saturday night, Dr. John G. Alexander, Baltimore, was rendered helpless by a blow on the head and robbed of his watch and chain.——Hugh H. Young, Colonel, M. C., U. S. Army, Baltimore, who sailed for France with General Pershing and has been on duty there ever since, returned to his home in Baltimore, January 26, on a short leave of absence. His headquarters are now New York City until he is discharged.——Archibald C. Harrison, Lieutenant-Colonel, M. C., U. S. Army, Baltimore, executive head and chief surgeon of the Maryland University Base Hospital Unit No. 42, is expected to return to the United States early in February.——Dr. Harry Friedenwald, Baltimore, has been appointed medical adviser to the American Zionists' medical unit, which is now in Palestine, and has sailed from New York to join the unit.

Drug Addicts on Increase.—That morphin and other drugs are obtained in Baltimore most flagrantly, that the number of users has increased alarmingly, and that a number of physicians are engaged in a lucrative practice of furnishing narcotics through prescriptions are the statements made recently by Marshal Carter. The Harrison Antinarcotic Act has not diminished the sale of drugs, but opened a channel through which addicts to drugs can obtain ready supplies of narcotics. That there are three times as many drug addicts in this city now as there were a year ago is borne out by the records of the United States internal revenue inspector's office. The inspector testified at the central police station a few days ago that the records of his office showed 750 names in 1917, and that for the year just closed the number has increased to 2,100. A quiet investigation was conducted by the police recently, and the names of physicians prescribing and the druggists furnishing drugs were obtained. Through the system of prescribing for the "reduced treatment," a number of addicts have obtained major quantities and have been able to peddle the drug.

NEW JERSEY

New Officers.—At the annual meeting of the Atlantic County Medical Society, held in Atlantic City, January 10, Dr. Henry T. Harvey, Atlantic City, was elected president; Dr. Henry C. Munro, Jr., Pleasantville, vice president, and Dr. Edward Z. Holt, Atlantic City, secretary-treasurer. The society adopted resolutions deploring the action of the Atlantic County Deputy Board of Free Holders in refusing to furnish funds for the continuance of the work of the mosquito extermination.

Personal.—Dr. Byron M. Harmon, resident physician to Mercer Hospital, Trenton, is one of the fifteen physicians who comprise the relief unit being sent by the American Red Cross for work among Syrians and Armenians.——E. Blair Sutphen, Lieutenant, M. C., U. S. Army, Morristown, who has been ill with typhoid fever at Camp Zachary Taylor, Ky., is reported to be convalescent.——At the annual meeting of the board of health of Gloucester Dr. John A. Beek, Gloucester City, was elected medical inspector. The annual report of the treasurer of the board showed that more than $6,000 was spent during the influenza outbreak in payment of physicians and nurses. The entire expense of the board for the year will exceed $8,000.——Dr. Charles B. Sitgreaves, Pemberton, has been appointed medical superintendent of the Burlington County Tuberculosis Sanatorium, New Lisbon, to succeed Dr. Daniel F. Remer, Mount Holly.

MASSACHUSETTS

East Boston Physicians Meet.—At the fifth annual meeting of the East Boston Medical Society, Dr. Frank H. Tilton was elected president; Dr. Robert Bonney, vice president; Dr. J. Danforth Taylor, secretary, and Dr. Alexander L. McLaren, treasurer, all of Boston.

Personal.—Dr. Frank G. Wheatley, North Abington, has been appointed a member of the board of trustees of the Massachusetts School for Feeble-Minded.——Dr. W. Edward Balmer, Whitinsville, has been nominated medical examiner (coroner) for the seventh Worcester District to succeed Dr. William L. Johnson, Uxbridge, resigned.

NEBRASKA

New Dodge County Officers.—At the annual meeting of the Dodge County Medical Society, held in Fremont, Dr. Albert E. Buchanan, Fremont, was elected president, Dr. Albert E. Hoff, North Bend, vice president, and Dr. Charlotte P. Siever, Fremont, secretary-treasurer.

Personal.—Dr. Hall H. Humphrey, Daykin, has been appointed a member of the Board of Medical Examiners of the state board of health, succeeding Dr. William T. Johnson, Pawnee City, deceased.——Dr. Charles E. Hershman, Alliance, has been appointed staff surgeon of the Burlington System.

Hospital Items.—Mrs. Margaret A. Henry, wife of Dr. Edwin C. Henry, Omaha, has purchased two lots at Twenty-Sixth and Dewey streets, on which she will erect a new Lord Lister Hospital, three or four stories in height, with accommodation for 125 to 150 patients. The building will be ready by the end of the year.——The Methodist Hospital, Omaha, has purchased the house of Mrs. T. T. Northwall for $10,000. ——The board of trustees of St. Luke's Hospital, Kearney, has purchased a new site for a building, and expects to break ground for the erection of a new building for the institution, to cost $50,000.

NEW MEXICO

Personal.—Dr. Leo L. Cahill, Springer, is seriously ill and under treatment at Miner's Hospital, Raton.——Dr. Charles M. Yater, Roswell, has been appointed health officer of Chaves County.——At the annual meeting of the New Mexico Public Health Association held in Albuquerque, Dr. Oliver T. Hyde, Albuquerque, was elected first vice president; Dr. Frank N. Carrier, Santa Rita, secretary, and Drs. Robert C. Kirkwood, Major, M. C., U. S. Army, Fort Bayard; Walter E. Kaser, East Las Vegas; James N. Massie, Santa Fe, and William F. Wittwer, Los Lunas, were elected directors.

Public Health Needs of the State.—Surg. John W. Kerr, U. S. P. H. S., as the result of an exhaustive study of public health conditions in New Mexico, details the personnel and expenditure required in his opinion properly to protect the health of the people of the state. This includes a health council composed of physicians and laymen and a state department of health with adequate appropriations to carry on the work; commissioner of health with a sanitary commissioner, bacteriologist and laboratory; vital statistician; supervising public health nurse, and such clerical assistance as may be necessary. He estimates that the state could easily afford to devote $50,000 a year to health work.

NEW YORK

Personal.—Dr. W. A. Matlick, Buffalo, has been appointed superintendent of the Aitken-Crow Wing Counties Tuberculosis Sanatorium, near Deerwood, Minn.——Dr. Julius Dworetzky, Staten Island, formerly of the sanatorium a Otisville and Sea View Hospital, announced that he has returned from France and will resume practice at Liberty.

Bill to Put State in Dairy Business.—An amendment to the Cotillo bill, aimed at the distributor's-producer's milk trust, has been framed for introduction into the legislature. It proposes a state commission to deal with the milk problem with authority to spend $250,000 or more yearly to establish agencies for the distribution and sale of milk at fair prices.

Enforcing Narcotic Drug Control.—Plans for the enforcement of the narcotic drug law, which went into effect February 1, were recently formulated at a conference of deputies of the Department of Narcotic Drug Control. The department intends to have its representatives visit every person or institution authorized to possess, dispense or prescribe habit-forming drugs to ascertain if their records comply with the law, and in case of violation to enforce the law and take steps to have the offender punished. Blanks have been sent to 3,000 persons affected by the law. The Department of Drug Control sent a communication to the New York County Medical Society stating that it realized that many of the narcotic drug problems were administrative, educational and medical rather than legislative, as was most clearly shown by the testimony brought out at the hearings of the legis-

lative investigating commission. The commission therefore wished so to administer the law that the honest physician would be hampered as little as possible in the care and treatment of drug addicts and other patients. The commission also announces that its purpose is to administer the law in a spirit of helpfulness to the unfortunate drug addicts and to put them under such care and restriction that the growing evil of narcotic drug addiction may be effectually checked. The commission earnestly requests the cooperation and assistance of the medical societies of the state in restraining certain well known evils and abuses that existed among some of those legally entitled to possess and dispense narcotic drugs, and invites both medical organizations as such and physicians as individuals to consult freely with the department and to offer either suggestions or advice.

New York City

Ask Copeland's Resignation.—At a meeting of the representatives of more than sixty New York civic organizations, January 20, the action of Health Commissioner Royal S. Copeland in separating the division of industrial hygiene from the bureau of preventable diseases was condemned. Demands were made for Dr. Copeland's resignation and for the investigation of his whole bureau by the board of aldermen and by the state legislature.

Personal.—Richard Derby, Jr., Major, M. C., U. S. Army, who has been serving with a medical unit in France, has returned to this country.——Dr. Dudley D. Roberts has been released from military service and has resumed his practice in Brooklyn.——Charles White Berry, Lieutenant-Colonel, M. C., N. G., N. Y., Brooklyn, has been appointed adjutant-general of the state.——Dr. Smith Ely Jelliffe has retired from the editorship of the *New York Medical Journal.*

To Extend Industrial Hygiene Work.—As the result of a conference held by the health commissioner, Dr. Royal S. Copeland, and representatives of the labor sanitation conference, plans have been announced for the extension of the health department's work in industrial hygiene. The work is to be extended to new fields of industry, including stone and marble cutters, lithographers, printers, painters and the shipbuilding industry. The board of estimate has consented to make the money for this work available at once, and Dr. Copeland has appointed ten temporary medical inspectors and fifteen temporary sanitary inspectors to begin work immediately.

Gift to Broad Street Hospital.—An anonymous donor has agreed to give $100,000 to the Broad Street Hospital with the provision that the balance of $200,000 needed for the erection of an addition to the hospital be raised by March 1, 1919. This hospital, which has been in operation only since September, 1917, had to increase its facilities within three months after opening its doors by leasing the entire adjoining building. Admirers of the late Col. Theodore Roosevelt have pledged themselves, as a memorial to him, to endow an elaborate suite of rooms in the new addition. Up to the present time $60,000 has been contributed, and the two buildings adjoining the hospital have been purchased and are being held in trust for expansion.

NORTH CAROLINA

Personal.—Dr. Edgar L. Sutherland, Dublin, Va., is reported to be seriously ill with bronchial pneumonia.——Dr. James E. Kerr, Lilesville, and Julian D. Maynard, Wadesboro, have been made members of the Waynesboro Board of Health.

New Officers.—At the annual meeting of the Buncombe County Medical Society, held in Asheville, the following officers were elected: president, Dr. Charles D. Colby; vice president, Dr. James M. Lynch, and secretary-treasurer, Dr. John W. Huston, all of Asheville. It was reported that twenty-five members of the society either were at present or have been in the military service of the United States.

County Health Organization.—The progress of county health work in the state is encouraging. At present sixteen counties embracing a total population of 687,634, or 28.5 per cent. of the entire population of the state, have well developed and active health organizations. Of these sixteen counties, nine have furnished a summary of their work, which includes the construction of 7,364 sanitary closets, the examination of 20,834 individuals for hookworm disease, and the treatment of 3,928 persons for this disease; the visiting of 479 schools by health officers; the examination of 38,969 schoolchildren by their teachers, and of 12,699 by the health officers; the treatment of 6,171 children for physical defects; the physical examination of 1,528 adults by health officers; the inoculation of 37,324 persons against typhoid fever; the vaccination of 6,450 against smallpox; the quarantining of 4,356 cases of infectious diseases; the holding of 696 public health meetings, with an attendance of 87,450, and the preparation of 815 articles dealing with health subjects for the county papers.

OREGON

State Board Budget.—The state board of health has asked the legislature to appropriate $47,500 for the coming biennium. The plan proposed provides for an executive office, with a state health officer at its head, a bureau of vital statistics, a bureau of preventable diseases, a bureau of hygiene and sanitation, a bureau of laboratory work, apparatus, and in addition, a general expense item of $4,700.

Personal.—Dr. Leon Wolff has resigned as deputy city health officer of Portland, and has been succeeded by Dr. Ernest N. Crockett, Portland, who has recently returned from military service.——Dr. Estella Ford Warner, Portland, has been appointed director of social hygiene and physical education of the Young Women's Christian Association in Russia, and sailed for Archangel, Russia, January 22.——Dr. Seth M. Kerron has been appointed to succeed Dr. Waldo L. Cheshire as health officer of Eugene and in addition will act as school health officer.——Dr. Edgar O. Dutro, Hood River, deputy state health officer, has resigned.

Influenza.—In Portland, January 19, it was believed that the epidemic of influenza had been checked, though there were 204 new cases reported the previous day, with seven deaths. During the previous week 1,850 new cases had been reported, with a total of 115 deaths reported, though some of the deaths belonged to the previous week's record. Lieutenant-Colonel MacGruder of the United States Public Health Service, who has been in charge of sanitation in extracantonment zones on the Pacific Coast and who was sent by Surgeon-General Blue to help combat the epidemic, is quoted as being strongly in favor of the universal wearing of well made masks as a preventive measure, in connection with the other repressive measures that have been in force. To accommodate the large number of patients, barracks were erected at the Multonomah County Hospital. The cubital system of segregation of influenza patients was adopted in all Portland hospitals beginning with the date mentioned. To January 24, the total number of cases reported to the state health department since October 13 was 16,355; the total number of deaths 1,151. The total number of cases since January 1 was 4,719, and the number of deaths 307. The number of cases reported January 23 was 102, with twenty deaths. Dr. E. A. Sommer, director-general of the organization fighting influenza in Multonomah County, says that stronger state health laws with power of enforcement are needed to combat such epidemics.

PENNSYLVANIA

Semicentennial of Society.—The Medical Society of Franklin County celebrated its fiftieth anniversary, January 21, with a dinner at Chambersburg. There is only one of the charter members of the society still living, Dr. J. Burns Amberson, Waynesboro, who was unable to be present. The following officers were elected: president, Dr. Samuel D. Shull, Chambersburg; vice presidents, Drs. Joseph P. Maclay, Chambersburg, and LeRoy H. Saxe, Fannettsburg; secretary, Dr. John J. Coffman, Scotland (reelected), and assistant secretary and treasurer, Dr. Frank N. Emmert, Chambersburg.

Personal.—After ten years of official connection with the department of health of Pennsylvania, during the last year of which he served as acting commissioner of health, Dr. B. Franklin Royer, Harrisburg, has reentered civil practice.——Dr. Charles E. Hays, Johnstown, was elected president of the state board of the Anti-Saloon League at its annual meeting in Harrisburg, January 22.——The resignation of George H. McConnon, Captain, M. C., P. M., Wilkes-Barre, has been accepted under date of Dec. 16, 1918.——The leave of absence granted Samuel H. Heller, Captain, Sanitary Detachment, First Infantry, P. R. M., Lancaster, has been extended from January 12 to April 12.

Philadelphia

Influenza Declining.—During the week which ended at noon, January 31, 614 new cases of influenza were reported to the bureau of health, as compared with 792 cases in the previous week.

Election.—The Philadelphia County Medical Society at its annual meeting, January 15, elected Dr. B. Franklin Stahl, president; Dr. John W. West, vice president; Dr. J. Morton Boice, secretary, and Dr. Edward A. Shumway, treasurer.

Officers Elected.—At the last meeting of the Northern Medical Society, the following officers were elected for the ensuing year: president, Dr. Irwin S. Meyerhoff; vice president, Dr. Louis Jurist; secretary, Dr. Mulford K. Fisher; treasurer, Dr. John W. Millick, and corresponding secretary, Dr. David Nussbaum.

Personal.—Dr. Laura Hunt has returned after nine months of service in France in the laryngological department of the children's bureau of the Red Cross.——William H. Walsh, Lieutenant-Colonel, M. C., U. S. Army, has been made chief medical director of the Great Children's Hospital to be established at Mons, Belgium.

Italian Hospital Founded.—The founding of an Italian hospital in the vicinity of Sixty-Fifth and Vine streets, and the announcement that a prominent Italian had given $50,000 toward the project, was made public at a dinner at the Adelphi, January 30, given by the Italian residents of the thirty-fourth ward to the physicians, nurses and other members of the thirty-fourth ward influenza board for their faithful, unselfish and heroic services at the time the influenza epidemic was raging.

WASHINGTON

Personal.—Dr. Edward F. Hixon, Vancouver, who has been seriously ill for several months, is reported to be improved.——Dr. Stanley H. Titus, Spokane, who has been ill with pneumonia, is convalescent.——Dr. Alice M. Smith, Tacoma, has been made a fellow of the North British Academy and a member of its honorary council.

WISCONSIN

Proposes Vaccinating Legislators Against Influenza.—Dr. C. A. Harper of the state board of health, in his report to the finance committee of the legislature asking for appropriations for the present year, suggests that the members of the legislature be vaccinated against influenza and pneumonia with the government lipovaccines, as an example or test of the efficacy of the vaccines, and that the people generally be vaccinated against influenza, which he says is by no means past the danger point in the state. Appropriations are asked for the work of the board in the amounts of $55,000, which includes $5,000 for child welfare work and $5,000 for work against contagious diseases. An additional appropriation of $25,000 is also asked to combat venereal diseases, to equal the $25,000 appropriation of funds for this purpose from the federal government.

CANADA

New Psychiatric Hospital.—A new military hospital for mental diseases is to be established at London, Ont. The plans call for six ward buildings and one administrative building. The hospital will not be used for nervous cases, as mental and nervous cases are kept separate.

Queen's University.—January 29, Queen's University graduated a large class in medicine, the largest in the history of that institution. A number of the graduates of this last war session are medical students who served overseas in various capacities, but principally with the Queen's Hospital Corps in Egypt and France.

Personal.—Dr. James F. Cattermole, assistant superintendent of the Hospital for Epileptics, Woodstock, Ont., has resigned.——Capt. Benjamin Lyon, C. A. M. C., Kingston, Ont., has been awarded the Military Cross.——Capt. Walter W. Wright has returned to Toronto from overseas and resumed practice.——Surgeon-Probationer Graham Chambers, Toronto (1920), is on H. M. S. *Badger*, which was recently at Constantinople and was proceeding to Sebastopol.

Influenza in Quebec.—In the legislature of Quebec, the leader of the opposition, Mr. Arthur Sauve, recently expressed himself as not being satisfied with the steps taken by the board of health of that province to check the Spanish influenza which still exists in many parts of the province. He thinks that the board of health started too late when the epidemic struck that province. The prime minister, Sir Lomer Gouin, strongly defended the board and said that great devotion had been shown by the physicians and nurses of the province, and that the board of health was showing the same diligence today as it had at the outbreak of the disease and had continued to do throughout its course.

GENERAL

Laryngologists to Meet.—The annual meeting of the Middle Section of the American Laryngological, Rhinological and Otological Society will be held at Chicago, February 22, under the chairmanship of Dr. Otto J. Stein.

Personal.—Major-Gen. William C. Gorgas, U. S. Army, retired, will return from Guatemala to Washington, D. C., early in February, and on his return to South America in the spring will be accompanied by Mrs. Gorgas.——Rear Admiral Robert M. Kennedy, M. C., U. S. Navy, in command of the Naval Hospital, Washington, D. C., was operated on for intestinal disease, January 7.——Lieut.-Col. Herbert A. Arnold, M. C., N. G., Pa., retired, Ardmore, Pa., was elected surgeon of the Pennsylvania Commandery of the Military Order of Foreign Wars at its annual meeting, January 14.

Progress of Venereal Disease Work.—The division of venereal disease, United States Public Health Service, is conducting throughout the country approximately 175 clinics. During the period from Nov. 15 to Dec. 15, 1918, there was a total of 19,456 visits to twenty-nine clinics, or an average daily attendance of 38.1 at each clinic. There were 2,489 new cases, which was an increase of 188 cases over the preceding month. A total of 25,543 treatments were administered and 11,195 cases were remaining under treatment in the clinics, hospitals, and detention homes on December 15. As a result of 1,845 "follow-up visits" made by the clinic nurses and social workers, there were 1,070 visits to the clinics.

To Inspect Home Hospitals.—With the authorization and approval of Surgeon-General Ireland of the Army, an official committee of the National Red Cross has begun a tour of inspection of the forty-three general hospitals throughout the country where wounded American fighting men are receiving care. Debarkation hospitals where wounded soldiers, marines and sailors are being received from overseas are being visited first. The object of the inspection is to improve the service of the Red Cross wherever possible. The committee is headed by Col. C. H. Connor, assistant general director of military relief and chairman of the Medical Advisory Committee. The other members are lay men and women.

American Woman's Hospital Helps Serbia.—At a recent meeting of the American Woman's Hospitals, Madame Grouitch, wife of the Serbian minister and herself a commissioner of the Serbian government, told of the great need of physicians in Serbia. There are only 140 Serbian physicians left; all the rest have been killed in war or have died of disease. The Serbian unit of the American Red Cross, which will leave for work in Serbia as soon as passports can be obtained, includes Dr. Minnie C. O'Brien, San Antonio, Texas; Dr. Marjorie B. Burnham, Kinsman, Ohio; Dr. Katherine M. Cook, New Wilmington, Pa.; Dr. Mary H. Elliott, Holly Springs, Miss.; Dr. Alberta F. M. Greene, Fergus Falls, Minn.; Dr. Lulu Hunt Peters, Los Angeles; Dr. Helen T. Rattermann, Cincinnati; Dr. Harriet M. Gervais, Dorchester, Mass.; Dr. Sarah Elizabeth Foulks, Davenport, Iowa.; Dr. Edna Ward, Denver, and Dr. Marie Hyndman, New York. At this meeting it was announced that an ambulance had been given to the American Woman's Hospitals by the Patriotic Penny and National Special Aid Society of Wilmington, Del. Major Gibson, manager of the Red Cross in France, has allowed $50,000 for the maintenance of the society's hospital at Luzancy. Gifts amounting to about $2,500 from donors in this country were also announced.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, New York City, $5,000 by the will of Elizabeth H. Keyes.

Germantown Hospital and Dispensary and Chestnut Hill Day Nursery, Philadelphia, each $1,000 by the will of Sarah R. Watson.

Relief Work in Siberia, an appropriation of $200,000 by the American Red Cross.

Soldiers and Sailors' Hospital, at Boehne Camp, Evansville, Ind., a donation of $1,300 by Mrs. Sallie H. Roots, Evansville, in memory of her parents, for the equipment of one of the new wards.

Johns Hopkins University, Baltimore, $200,000, for the building and equipment of a laboratory or building devoted to the technical arts, or, if more desirable, for the erection of University Library Building, by the will of Eugene G. Mergenthaler.

Lock Haven, Pa., Hospital, a donation of three $1,000 U. S. Liberty Bonds by Farmer Stewart as a memorial to his deceased wife.

Home for Incurables or Home for Aged and Infirm under the auspices of the Philadelphia Federation of Jewish Charities, a trust fund of $20,000 created by the late Rose Rice, on the decease of two sisters, as a memorial to Amelia Rice.

Mount Sinai Hospital, New York City, $15,000; Hebrew Orphan Asylum, United Hebrew Charities, Home for Aged and Infirmed Hebrews, and Hebrew Infant Asylum, each $10,000; Lebanon Hospital,

$5,000, and St. Vincent's and Presbyterian Hospitals, each $2,500, by the will of Benjamin Blumenthal.

Mount Sinai and Women's Hospital, New York City, and Middlesex Hospital, London, England, each $5,000, by the will of Henry Joseph Duveen.

Cornell University, Ithaca, N. Y., $5,000, by the will of Dr. William Mecklenburg Polk, New York City.

Marine Hospitals for Care of Discharged Disabled Soldiers and Sailors.—Under an arrangement suggested by the War Risk Insurance Bureau and made by the Public Health Service, if approved by Congress and an appropriation made, soldiers, sailors, marines and others discharged from military service with disease or injuries contracted in the service will be cared for in the marine hospitals of the United States Public Health Service. At present the War Risk Insurance Bureau under the law creating it and the regulations governing it is responsible for the care of 1,724 beneficiaries who require medical or surgical treatment. Within a short time it is expected that provision will have to be made for at least 24,500 men discharged from the service on account of tuberculosis, and for 50,000 cases of psychoneurosis, epilepsy and other nervous ailments. The plan, which is now before Congress, is to empower the Public Health Service to increase the present capacity of the twenty-two marine hospitals of 1,689 beds, to 5,208 beds, and to provide an additional 2,450 beds in new hospitals and sanatoriums to be built in various parts of the country. A suggestion to make the 150 small Army posts scattered throughout the United States hospitals for the care of these men is not deemed feasible or desirable. The plan now proposed and under consideration would, it is believed, have the advantages of a minimum of outlay for overhead construction and administration, favorable location near large cities, employment of a hospital organization with long and successful practical experience, and finally, the fact that the War Risk Insurance Bureau and the Public Health Service are both parts of the Treasury Department, thus permitting the closest possible coordination of activities.

FOREIGN

Death of Bang.—The micromethod test for sugar in the blood has carried to every country the name of Dr. Ivar Bang, professor of physiologic chemistry at the University of Lund. News has just been received of his sudden death while at work in his laboratory.

Fight Typhus in Siberia.—The American Red Cross announced that an antityphus train, the control of which is under the American Red Cross Commission and which is operated by the American Red Cross, is to be sent through Siberia to fight the typhus situation, which has been very grave. The train is composed of fourteen cars, including a car with bathing facilities, cars for clothing, drugs, and for personnel. The train will act as sort of standard bearer. On coming to towns where typhus prevails, the cooperation of local authorities, hospitals and physicians will be obtained, and the work done as far as possible through the Russian people themselves. Circulars printed in Russian will be distributed along the line, informing the people of the necessity of bathing and keeping clean and detailing the chief precautions against typhus.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Deaths in the Profession.—Recent exchanges from Brazil bring a long list of physicians who have been victims of influenza. Among them are Dr. **T. Bayma,** the distinguished physician and bacteriologist of S. Paulo, director of the bacteriologic and the vaccine institutes there, aged 55. His writings on tropical medicine and hygiene have frequently been summarized in THE JOURNAL, and he presented seven important communications to the recent South-American Congress of Microbiology.——Dr. **Santos Moreira,** a leading pediatrist of Rio de Janeiro, secretary of the Sociedad Brazileira de Pediatria, director of the *Medicina Clinica* and frequent contributor to journals on children's diseases.——Dr. **Paulo Silva Araujo,** a leading microbiologist who studied under Wright in England and under Ehrlich in Germany, and in 1915 published his "Vaccine Therapy of Bronchial Asthma." The clinical laboratory founded by him turned out high grade organotherapeutic products and, among others, isolated the *Bacillus bulgaricus* in Brazil.—— The *Brazil Medico* of November 2 gives the names of fourteen other physicians who had succumbed at that early date to the epidemic, including Dr. **S. B. Montenegro.** Nearly all were in the very prime of youth and health.——The death is also reported at Buenos Aires of Dr. **E. Diana,** a popular pediatrist.

CORRECTIONS

Discussion on the Face Mask.—In the report of the proceedings of the American Public Health Association (THE JOURNAL, December 28, page 2174) a short discussion is credited to Dr. W. H. Kellogg, secretary of the California State Board of Health. Dr. Kellogg writes that the statement published did not represent what he said. Most of Dr. Kellogg's discussion referred to charts which he exhibited and which could not be reproduced in connection with the abstract sent in by the reporter. A more complete copy of the discussion follows:

DR. W. H. KELLOGG, San Francisco: I shall confine the few remarks I have to make to the subject of the wearing of gauze masks because I am more or less familiar with this phase of the prevention of the spread of influenza by reason of having come from California where this method has been given the most thorough trial. The people of San Francisco put on gauze masks by an ordinance that was enforced very thoroughly, and they wore these masks on the streets during the time this ordinance was in effect. I have always believed very strongly in the possibilities for the prevention of droplet-borne infections by means of the use of the gauze mask, but I am sorry to say, I have not the same confidence now that I formerly had. It used to be my custom to tell medical students that if they put gauze masks on all people for a period of two or three weeks, all the droplet-borne infection would probably be abolished, but I no longer believe that.

In the determination of the value of a measure such as this, the only way by which we can arrive at any rational conclusion is to compare the experiences of cities that have used the measure and those that have not. The mistake has been made by some of our ardent advocates of considering only the experience of San Francisco and look at the curve of the deaths or of the cases and note there was a rapid decline from the moment the masks were put on the people.

(On a chart which was exhibited it was shown that the curve for San Francisco resembled closely that of Washington and Chicago, but that Los Angeles differed.)

It has been thought by some people in San Francisco that the experience of Los Angeles has proved that the mask did the business for San Francisco, and that Los Angeles is having a bad time because it did not wear the mask. The state board of health was importuned to put the mask on Los Angeles, but the evidence was not such as to warrant a move of this kind.

These curves (referring to chart) are the deaths and in Los Angeles you will note that the curve is sharper than it is in San Francisco. But against the curve of Los Angeles I have on the other charts the cities of Washington and of Buffalo, which are practically the same size, and of Philadelphia, which is much larger, and so far as I know, there are no cities in the list that put on the masks to the same extent that San Francisco did. Of the forty cities, the figures for which are published in the United States Census Bureau list, 13 had a higher mortality rate than San Francisco; 26 had a lower mortality rate, so that we have two things to consider in comparing these cities, one of which is the shape of the curve and the duration of the epidemic. It is to be noted that the period of time is about the same for all of them from the beginning to the end. That is one point in which San Francisco shows no difference over the others. Another is the number of deaths resulting from the disease. San Francisco had a death rate of 4.7 per 1,000, whereas Los Angeles, which apparently suffers by comparison on the chart, had a death rate of 3.3 per cent.; Chicago 3.5 per cent., etc.

As to the reasons for the failure of the mask which theoretically should be such a valuable thing, there are a number of things to my mind to account for that. If the mask is properly made it affords an efficient protection against droplet-borne infections. Many of the masks used were not properly made; they were made of too light gauze and of too few layers, many of them, to comply with the law. Again, people did not wear masks in the places where they were needed most, where people entered into associations with ill relatives and office associates. In the banks, when the curtains were pulled down, the clerks took off their masks and got busy over their books, so that there was every chance, according to the theories of droplet-borne infections, for the disease to travel from one to the other. Therefore, the measure does not appear to me to be worthy of consideration.

I am growing doubtful as to the value of the mask as a protection to the individual who understands what he is doing. San Francisco Hospital had an incidence of infection of 78 per cent. among the trained nurses which could not be accounted for by the fact that they took the masks off when in association with patients. If that were the cause of the infection, it would confirm the usual incidence among the general population, but such a high rate was to be accounted for only by the fact that they got their infection from patients themselves in spite of the fact that they were wearing properly made gauze masks.

Abdominal Hysterotomy.—We are informed by Dr. E. G. Zinke that an error occurred in the abstract of his paper on "Limitations of Cesarean Section," published in THE JOURNAL for Jan. 18, 1919, page 220, second column, tenth line from the bottom. The words "abdominal hysterectomy" should read "abdominal hysterotomy."

MEXICO LETTER

MEXICO CITY, Jan. 26, 1919.

The Typhus Congress

The Congreso Nacional del Tabardillo closed its sessions January 21 after a week of discussion which seems destined to bear fruit. About 135 physicians registered for the meeting, and thirty-four communications were presented relating to the history of Mexican typhus, its etiology, symptomatology, treatment, prophylaxis and epidemiology. Practitioners came from all parts of the republic to take part in the discussions, even from the remotest states.

Two articles were read which sustained the assumption of the important part played by Plotz' *B. typhi exanthematici* in the development of the disease, but the predominant opinion was that it had not been proved that this bacillus was the specific germ of the disease. The observations of Muratet, Ceconi and Fraenkel on the importance of the provoked exanthem in differentiation were cited, and it was urged that observations to confirm this should be compiled.

TREATMENT

In treatment of the disease, the antityphus serum prepared by Nicolle and Blaizot was the main topic discussed, and it was deplored that it had not been possible as yet to prepare it in Mexico nor obtain it from the United States (our usual source of supply for therapeutic serums), as to date we have not learned that it is yet made in our neighbor nation. Besides the scientific interest of the matter, it has commercial interest as well, which perhaps the manufacturers of biologic products will not overlook. As Mexican typhus is endemic throughout the central tableland of the country, there would be a great demand for the said serum, especially if the favorable results which the French investigators are said to have realized from its use are confirmed by others.

RESEARCH ON TYPHUS

A permanent committee was appointed to carry on research on typhus—which still has many points insufficiently cleared up—and to organize the next congress which will convene in the City of Mexico in 1921. The proposal, by Dr. A. B. Vasconcelos, to found a special institute for experimental study of tabardillo was approved, relying on private benevolence for the purpose. Although it was recognized that the present moment is not very propitious for such an undertaking, yet the possibility was recognized that some rich and philanthropic citizen or citizens of the United States might prove willing to invest mony in this way as it would redound to the benefit of humanity and would contribute to draw still closer the bonds of friendship between the two neighboring peoples, which is the ideal cherished by various leading minds among the Mexicans. The committee of organization for the next typhus congress includes Dr. Alfonso Pruneda as president and Dr. R. E. Cicero as secretary. The address of the latter is 2/a calle de las Moras, No. 34, Mexico City.

Official Campaign Against Syphilis

The Departamento de Salubridad, the national public health authority, has decreed that in future the candidate for matrimony must present a certificate which asserts that the Wassermann seroreaction with the blood of the candidate has given negative results. Those persons who reside at points where there are no laboratory facilities will comply with this formality by presenting a certificate based on the clinical investigation and equally negative. As a further measure, physicians are required to inform the departamento of all their syphilitic patients who have abandoned treatment before they have been cured as radically as is possible.

Inherited Syphilis at Puebla

We are informed from this neighboring city that during the month of December last there were thirty-one deaths from inherited syphilis. This is the largest number ever recorded for a single month, and it indicates the increasing prevalence of syphilis in that community.

British War Relief Work

The British Women War Workers Society of this city presented a favorable balance sheet at the close of the year. According to this, they had collected more than 14,000 pesos, almost all of which was invested in the war relief work done by the society; 221 sweaters, 790 pairs of socks, and a large number of cotton articles were forwarded to Europe.

Association for Prevention of Blindness

This beneficent association is soon to open a free consulting dispensary for persons with anything wrong with their eyes. In connection there will be an optician's establishment. In order to accomplish this high aim, an appeal was made to charitable persons and they succeeded in collecting the sum of 8,000 pesos from private parties, with which they have started the work. The association accepts with gratitude any cash donations which any one may make to aid the work of the consultorio. The official title of the association is the Asociacion par evitar la Ceguera en Mexico, and its post office address is Apartado 5331, Mexico, D. F.

Proposed Roadway Between Mexico City and El Paso

A project is under discussion for the construction of a roadway to connect this city with El Paso (Texas) which would permit, if realized, automobile travel between the two countries. There is a plan to form a company which will supply the necessary capital, and they have asked for the concession from the authorities.

The Spanish Edition of The Journal

I have been able to ascertain that the first number of the Spanish edition of THE JOURNAL has made a very good impression on the profession in Mexico on account of the value of its original articles as well as by the wealth of information which it contains.

Personal

Dr. Rafael Cepeda has been appointed presidente municipal of the City of Mexico, and Dr. F. Bello, a prominent internist, has been appointed to a similar position in the neighboring city of Puebla. Dr. Bello has announced that he will turn back into the municipal treasury the salary to which he is entitled, as long as he holds the position.

The Cold Wave

The cold was intense here from January 22 to 24; we are not accustomed to such cold weather. It is known that two children died in consequence of sleeping in the extreme cold, and three pedestrians were buried by the snow on the road to Toluca.

LONDON LETTER

LONDON, Jan. 7, 1919.

The Prevention of Venereal Disease

The apprehended danger of the increase of venereal disease as a consequence of demobilization has been referred to in these letters. A controversy that would have been impossible only a few years ago, when the subject of venereal disease was treated with reticence in the lay press, has taken place in the *Times*. A number of the leaders of the profession, including Osler, Ferrier, Rickman Godlee, and Mott, published a joint letter urging, in view of the daily increasing menace, that "timid and hesitating counsels should give place to clear advice and strong purpose. Extraneous considerations can have no place in sanitary problems; it is because they have had too much place that the National Council for Combating Venereal Diseases has failed. Smallpox and typhoid have been largely banished by measures based on knowledge of these diseases. Venereal diseases should be similarly dealt with. It has been abundantly proved during the war that they can be controlled by simple sanitary measures, the success of which is striking, and the materials for which can be obtained from any pharmacist. These measures should at once be made known, and available and organized instruction given in their application. This is the only effective method of meeting a dangerous situation—dangerous not only for our soldiers and sailors, but for the population at large."

To this criticism the president, vice president (Sir Thomas Barlow) and chairman of the National Council for Combating Venereal Disease replied that "while the council has taken full cognizance of all available scientific knowledge, it has deliberately decided against advocating the particular methods apparently suggested by the writers. The panacea is a wholesale distribution of prophylactic packets. The policy of the national council since 1916 has been early preventive treatment. Since July, 1918, it has pressed the same policy on the government and on the civilian population, and it is now in process of being organized throughout the country. The former course was denounced in scathing language by the secretary of the navy when America entered the war. The latter is now being vigorously carried out by the American medical authorities, experience having powerfully attested its efficacy. The success claimed by Sir William Osler and his associates for their procedure has been at least equaled by that advocated by the national council, and

this question cannot be discussed without taking into account the special facilities that exist whenever forces under discipline are being dealt with. The national council is not only concerned with combating disease in the armed forces but is striving to avert the peril on demobilization. Measures that can be applied to disciplined bodies may be absolutely impracticable in dealing with the general community. 'Extraneous considerations,' which the signatories lightly dismiss, and sentiment, which may exert a dominant influence on public opinion, cannot be disregarded. It is easy for distinguished scientists to lay down 'simple sanitary measures,' but the question resolves itself into administrative measures required on a large scale throughout the country, and here the difficulties begin. You cannot administer in such intimate matters without the intelligent acquiescence of the people. The unanimous opinion of sixty health officers of counties and large towns cannot be ignored. 'We are strongly of the opinion,' they state, 'that not only would the official distribution of prophylactic outfits to the civil population lead to moral deterioration of the nation, but it would not materially diminish the prevalence of venereal diseases.' In dealing with human nature it is not always possible to conform to the letter of scientific law."

The controversy was continued by laymen who were evidently somewhat mystified as to the point at issue, though one wrote: "If the critical hour is, say, 11 p. m., the national council objects to the use of disinfectants at 10:45, but raises no objection to the treatment at 11:05. The sinner must not prepare for immorality, but he may use the best means known to science to escape its consequence." In a leading article the *Times* took up the question and informed its readers that "until recently there was no certain means of cure and no certain means of prevention of syphilis. Medical science has now provided us with both, and there is prospect that in a few years one of the most appalling scourges of modern life will be almost unknown. Syphilis can be prevented by the use of calomel before infection, and less certainly by its use within an hour or two of infection. Medical evidence indisputably supports the view of Sir William Osler and his cosignatories. A simple amendment of the venereal diseases act, 1917, is necessary, in order that the preventive medicine may be easily obtained under the necessary safeguards." Evidently from motives of delicacy, although deprecating that these should stand in the way of the public interest when the extinction of such a plague is attainable, the *Times* has used the word "medicine" for ointment. This has led laymen into the error that syphilis can be prevented by the internal administration of calomel.

Malaria in England

The measures taken by the medical departments of the army and the Local Government Board have been effective in preventing the spread of malaria in this country through the agency of soldiers returned from the eastern campaigns (the worst of the war areas as regards malaria) who are carriers of the parasite. Army malaria patients brought back from those countries were treated in the military hospitals, which reduced to small and manageable limits any risk of the spread of the disease, except in a few districts where there was evidence of malaria having been contracted locally, on account either of the presence there of a large number of malaria carriers, or the existence of anopheline mosquitoes. As shown in previous letters, indigenous cases of malaria have thus originated in England during the war. *Anopheles* mosquitoes are found to be present practically in any part of England where the conditions are favorable to their breeding. Even the demobilization of the army now in progress may lead to an increasing number of human carriers of the malaria parasite being spread throughout the country. Fresh measures to meet this situation are being devised by the medical department of the Local Government Board in the form of extended civil administration. The local authorities will be directed to add malaria to the list of diseases made compulsorily notifiable and to transmit at once information of such cases. The precautions to be taken with a view to preventing the spread of the disease will also be published, and government medical inspectors will at once visit any infected area.

The Treatment of Hydrophobia in England

About twenty-five years ago hydrophobia was completely stamped out of Great Britain by the compulsory muzzling of dogs—a procedure that aroused considerable opposition among dog fanciers. During the war, cases have occurred in the west of England. As the most stringent precautions in the form of quarantine are taken when dogs are imported, and have proved successful during the long period which has elapsed, it is supposed that the disease must have been introduced by dogs carried in aeroplanes. Arrangements have been made for specific antirabic treatment at Plymouth with materials supplied by the Pasteur Institute of Paris. When persons are bitten by dogs in areas in which rabies is suspected it is recommended that the wound be treated as soon as possible with undiluted phenol (carbolic acid) or some cresol preparation or similar disinfectant. The disinfectant should be allowed to come into contact with all parts of the wound, and should then be washed out with water or dilute disinfectant. If no disinfectant of the kind is available, the wound should be thoroughly washed and irrigated with hot or cold water. If the dog is pronounced on competent veterinary authority to have had rabies, the person bitten should be urged to secure specific antirabic treatment as soon as possible, no matter what local treatment has been applied.

Airmen's New Height Record

Capt. Andrew Lang and Lieutenant Blowes have broken the world's altitude record on a British-built and British-engined biplane, flying at Martlesham, near Ipswich. The altitude attained was 30,500 feet, the time taken being 66 minutes and 15 seconds. Through a fault in the oxygen apparatus, Lieutenant Blowes collapsed, and at 28,000 feet the heating apparatus began to work erratically. The machine was brought to a stop through the lack of gasoline pump pressure due to the rarefication of the air. Luckily, Captain Lang was able to descend slowly, and at 20,000 feet Lieutenant Blowes recovered consciousness. Captain Lang had made two previous attacks on the altitude record, which had been held by America. He is well known in Australian motoring circles, and in 1910 drove a motorcar across northern Australia for his government in an exploring expedition. Lieutenant Blowes is an experienced pilot, and in France brought down several German aeroplanes. Both officers suffered from frost-bite, and the observer had to go to the hospital suffering from two badly frozen hands and toes, while the pilot's face and fingers were frost-bitten.

PARIS LETTER

PARIS, Jan. 9, 1919.

Early Treatment of Eye Injuries

At a recent meeting of the Académie de médecine, Dr. F. de Lapersonne, professor of clinical ophthalmology in the Paris medical faculty, reported the results he had obtained since July 15, 1918, in the treatment of eye injuries. At that time the large hospitals of Paris were regarded as evacuation hospitals, and, because of excellent transportation facilities, the wounded sent in from the front, were operated on in from twenty-four to forty-eight hours after being wounded. The doctor reported eighty-three cases of this sort in which operation was performed. Many of these patients had other injuries than those of the eyes, in fact, they had sustained multiple wounds, and had been operated on in the surgical service at the Hôtel Dieu.

In all of these cases, except three, the operation was performed under procain anesthesia, irrespective of the extent or degree of the intervention. When the roentgenogram showed the presence of a foreign body or of a fracture, de Lapersonne frequently resorted to orbitotomy, making a curved incision (following the rim of the bone) which gave free access to the orbit, at the same time ensuring the safety of the conjunctiva and the palpebral fissure. Immediate suture was the rule in all these early operations, suture of the conjunctiva after partial or complete ablation of the eyeball, suture of wounds of the eyelids with conservation of even the smallest shreds of tissue, suture of the circumorbital skin wounds, after removing blood clots, bone fragments and foreign bodies, and cleansing the wound. In some instances skin grafting had to be resorted to, using either a sliding or a pedicled flap, in order to cover over a denuded area. De Lapersonne insists that immediate suture of wounds should be the absolute rule in these cases of orbito-ocular wounds which come under the head of urgent surgery.

Treatment of Bone Fistulas

Dr. Auguste Broca recently discussed the statistics on bone fistulas, the result of war wounds, furnished the Société de chirurgie de Paris by Dr. G. Blanchard and by Drs. Dambrin and Montazard. It was interesting to note how Dr. Blanchard succeeded in obliterating the bone cavity resulting from the clearing out of all devitalized tissue in the fistula. At the time of operating, the cavity is treated according to the

Phelps' method (pure phenol, then 90 per cent. alcohol) and then packed with gauze wet with a mixture of phenol, balsam of Peru and spirits of camphor. The dressing is changed on the second or third day. The gauze plug is removed on the fifth day, and from then on the tamponade is made alternately with gauze wet with balsam of Peru and gauze wet with permanganate of potassium. On the tenth to the thirteenth day the bone is cleaned and secondary plombage is performed. Blanchard recommends for this filling a paste consisting of 150 gm. of paraffin; 15 gm. of balsam of Peru and 20 gm. of carbonate of bismuth. This paste, melted, is poured into the wound where it solidifies. Primarily, this is not regarded as a true plombage—to remain *in situ*, to become encysted—but as an internal dressing which is intended to prevent reinfection and which will eliminate itself gradually. The paste in place, secondary suture is done. The results are good, in the sense that a cure has been obtained, as a rule, in from two to four months, and it is possible that this time may be shortened.

Dr. Dambrin and Montazard called attention to the benefit from injection of methylene blue into the fistula (10 per cent. solution in a 5 per cent. solution of phenol or in a 4 per cent. solution of liquor formaldehydi) for the purpose of locating the more or less tortuous channels of the fistulas, and coloring the necrotic tissues, thus giving the operator needed information at the most opportune time. This procedure seems to be a very useful one.

On the other hand, they studied the effect of mineral waters —at the most famous watering places in the Pyrenees—and they found that the waters seemed to promote healing in the cases in which minor superficial lesions persisted, that is, in about 15 per cent. of cases. Sometimes these waters aided in verifying the permanency of the cure by provoking a "poussée" in the apparently healed area. The patients who seem to be most likely to benefit by these waters are those on whom an extensive operation has recently been performed. This treatment should be regarded as being only a supplementary one, to be carried out under the advice and control of an experienced surgeon.

Abdominal War Surgery

At a recent meeting of the Société de chirurgie de Paris, Professor Quénu discussed two reports made to the society on this subject, one by Dr. Caudrelier and the other by Drs. Maisonnet and Coulaud. Dr. Caudrelier divided his cases into two groups: (1) Those in which operation was performed as soon as the patient came under his care; (2) those cases (there were only 2) in which he operated later. There were 24 cases in the first group: 20 cases involved wounding of only one viscus (5 cases of wounds of the small intestine; 8 of the large intestine; one of the stomach; 3 of the liver; 3 of the bladder); in 3 cases several viscera were involved (2 cases of wounds of the large and small intestine; one case of wounds of the liver and the respiratory apparatus); one case of simple penetrating wound without any visceral lesion. Of these 24 cases, 18 were shell wounds and 6 were bullet wounds, and they were operated in from three to six hours after the wounding, most of them at the fifth hour; only one after nine hours. There were 9 deaths from peritonitis and hemorrhage in this series; 15 patients were cured. In the 2 cases in which Caudrelier did not operate immediately, he intervened later because of fever and local symptoms. In one of these cases he operated thirty-five hours after the patient had been wounded by a rifle bullet. He found a large hematoma, containing fetid material, behind the ascending colon. The latter was red, bleeding, but not perforated. This patient died a few days later.

Drs. Maisonnet and Coulaud made 100 observations, as follows: 33 patients were considered inoperable because of the gravity of their general condition; 42 patients were not operated on because they arrived too late or because of their satisfactory general condition in view of the nature of the wound; 17 patients were operated on although in a most desperate condition so as to give them some chance for recovery; 18 patients were in fairly normal condition when operated on.

The results obtained were: Among the 75 instances in which no operation was performed, there were 27 cures, 36 per cent.; among the 35 operated cases there were 11 cures, 31.4 per cent. At first glance, these two sets of statistics seem to be pretty much alike, with the odds slightly in favor of not operating. But Quénu showed, by an analysis of the cases operated, that among them, considered hypothetically as wounds of the abdomen and terminating in a spontaneous cure, were penetrating wounds of the abdomen alone, which should, therefore, be eliminated from the discussion. The principle of surgical intervention in penetrating wounds of the abdomen governs alike the cases seen in war and those seen in civil practice, and the statistics quoted by Maisonnet and Coulaud, in spite of the figures given, support this principle.

Using Soil to Combat Asphyxiating Gases

M. Daniel Berthelot recently stated before the Académie des Sciences that soil or earth can be used as a protection against asphyxiating gases. His researches demonstrated that white sand, either wet or dry, absorbs chlorin very poorly; hence it should not be used for this purpose. Yellow sand, containing iron, is preferable, although its gas absorbing power is not great; in fact it is a mediocre absorbant. On the other hand, ordinary soil, suitable for agricultural purposes, has a most remarkable fixating power for chlorin gas. This absorbing power, especially in the case of dry soil, may be increased two-fold by the addition of a few cubic centimeters of water; the addition of large quantities of water does not increase the absorbing power of the soil. This absorbing power is very manifest with earth containing about 10 per cent. of water, which is about the usual dampness in soil of this kind even in dry weather. It is only necessary to dig down a few centimeters in order to secure the soil containing the required moisture.

The Maimed Farmer

Many agriculturalists who have been maimed in the war are asking whether they will be able to support themselves by farm work in the districts whence they came. About 60 per cent. of these former farmers who have been maimed are not returning to farm work. This is a serious state of affairs for agriculture. Undoubtedly most of these men would be able to return to farming if they were supplied with suitable prostheses. They have only to be convinced of this. With that object in view, Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire recently called together in one of the halls of the Grand Palais the wounded and maimed agriculturalists who were still under treatment in the hospitals of Paris, to show them moving pictures portraying maimed agriculturalists at work. The Service de la main-d'oeuvre agricole has published 50,000 copies of a pamphlet entitled "The Maimed Farmer" which will be distributed among the various sanitary formations for the purpose of showing these men the different kinds of work which they may take up in spite of their condition and also the profits from them. Centers will be established at which prosthetic appliances and apparatus will be on exhibition, together with machinery modified to meet individual needs. A commission will have charge of this work, so that every applicant, with but few exceptions, may secure apparatus properly adapted to his needs.

Demobilizing Medical Students

According to instructions given by Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, the medical students in the army are to be stationed at sanitary formations in university centers which will make it possible for the students to continue their studies. This arrangement applies to the students of medicine who have served with the colors for more than fifty-three months, that is, those who were incorporated before the mobilization; and also students who have served between fifty and fifty-three months and, who have served at least thirty-two months in an infantry regiment or as division stretcher bearers or who have been wounded.

Marriages

CHARLES ROBERT HENRY, Lieut., M. C., U. S. Army, New York City, to Miss Addie Marsh Sparks, at Lafayette, Ga., Dec. 24, 1918.

JOHN SIMPSON CRATER, Lieut., M. C., U. S. Army, Bristol, Pa., to Miss Ethel Margaret Steidel of Jeddo, Pa., Dec. 24, 1918.

WILLIAM ANTHONY COOLING to Miss Nora Murphy, both of Wilton, Iowa, at Des Moines, Iowa, Dec. 27, 1918.

JAMES HOYT KERLEY, Lieut., M. C., U. S. N. R. F., to Miss Ethel Rae Johnson, both of Brooklyn, January 18.

JAMES WELCH GUEST, Chicago, to Miss Sarah Pickette Lindsey of Memphis, Tenn., Dec. 28, 1918.

JAMES H. COTTON, Toronto, to Mlle. Audrie Rubanni, at Toronto, January 25.

Deaths

Howard Emerson Ames ⊕ **Medical Director, Capt., U. S. Navy (retired),** Washington, D. C.; University of Maryland, Baltimore, 1874; aged 68; who entered the Navy in 1875, and was a member of the Greeley Relief Expedition; was one of the first sent to Kingston, Jamaica, at the time of the earthquake, and was in command of the Chelsea Hospital, during the great fire in Boston; a member of the Association of Military Surgeons of the United States; whose last assignment to duty was at San Francisco, and who was retired for age on August 7, 1912; died in the U. S. Naval Hospital, Washington, December 27.

Andrew Culloden Panton ⊕ Portland, Ore.; University of Toronto, Ont., 1882; aged 62; one of the most prominent surgeons of the Pacific Northwest; for several years professor of anatomy and materia medicine in the University of Oregon, and for more than thirty years a member of the visiting staff of the Good Samaritan Hospital; chief surgeon of the Portland Railway Light and Power Company; a member and president of the State Board of Medical Examiners from 1904 to 1909; died at his home, January 18, from pneumonia following influenza.

Frederick Wilkinson Olcott ⊕ **P. A. Surg., Lieut., U. S. Navy (retired),** Washington, D. C.; College of Physicians and Surgeons in the City of New York, 1884; aged 57; who was retired as passed assistant surgeon in 1911, and by act of Congress was appointed, Feb. 13, 1911, to the rank held by him at the time of retirement and placed on the list of retired officers of the Navy, unlimited, on account of disability in line of duty; a patient at the Government Hospital for the Insane; died in that institution, January 26.

William Smith Lalor ⊕ Trenton, N. J.; University of Pennsylvania, Philadelphia, 1872; aged 70; in 1880 president of the medical societies of Trenton and Mercer County; city physician of Mercer County for six years; a school trustee and school superintendent each for three years; for seven years a member of the board of health, and for a long time vice president of the Interstate Fair Association; died suddenly at his home, January 18, from heart disease.

Charles Henry Riley, Baltimore; University of Maryland, Baltimore, 1880; aged 62; a member of the Medical and Chirurgical Faculty of Maryland; founder of and surgeon to the Woman's Hospital of Baltimore; professor of obstetrics in the Woman's Medical College of Baltimore; president of the board of trustees of the Sheppard and Enoch Pratt Hospital, Towson; died, January 23, from kidney disease following influenza.

Washington Berry Grove ⊕ **Medical Director, Capt., U. S. Navy;** University of Virginia, Charlottesville, 1896; aged 43; who entered the Navy in June, 1897, had been in command of the Norfolk (Va.) Hospital, as executive surgeon from October, 1915, to December, 1918, and had recently been assigned to the command of the U. S. Naval Hospital, Washington, D. C.; died in that institution, January 21.

Elmer Ellsworth Holt ⊕ **Capt., M. C., U. S. Army,** Mena, Ark.; Barnes Medical College, St. Louis, 1898; aged 51; who was on duty at Camp Jackson, Columbia, S. C., and was honorably discharged late in December, 1918, died at his home, January 23, from a gunshot wound, believed to have been self-inflicted, with suicidal intent, while temporarily deranged, as an after-effect of influenza.

Paul Carroll Dennett ⊕ **Lieut., M. C., U. S. Army,** Boston; Tufts College Medical School, Boston, 1916; aged 26; on duty with the 75th Coast Artillery Company, American Expeditionary Forces in France; was taken ill with influenza on the transport, and on his arrival was removed to Base Hospital No. 65, near Brest, where he died, October 16.

Edgar Cox ⊕ Kokomo, Ind.; Medical College of Ohio, Cincinnati, 1890; aged 49; chief of staff of the Good Samaritan Hospital, Kokomo; surgeon to the Union Traction Company of Indiana; city health officer of Kokomo; a specialist in surgery; while visiting at Winter Haven, Fla., was accidentally drowned, January 21.

William Frank Guilfoyle ⊕ **Capt., M. C., U. S. Army,** Philadelphia; University of Pennsylvania, Philadelphia, 1905; aged 36; who was on duty with the American Expeditionary Forces and assigned to the 111th Infantry, 28th Division, and was gassed several times; died in Base Hospital 31, Sept. 2, 1918, from exhaustion.

⊕ Indicates "Fellow" of the American Medical Association.

Guy Benjamin Taylor ⊕ **Asst Surg., Lieut. (j. g.), U. S. Navy,** Lexington, S. C.; Medical College of the State of South Carolina, Charleston, 1917; aged 25; who entered the Navy in October, 1917, and served in France until December last, when he was placed on duty at the U. S. Naval Hospital, Brooklyn; died in that institution, January 21, from pneumonia following influenza.

George Halsted Boylan, aged 74; surgeon in the French Army during the Franco-Prussian war; and decorated with the French Cross of Honor for distinguished service; a practitioner for fifty-four years, and for the last ten years a resident of Baltimore; died at his home, January 21, from pneumonia.

Bradford Ripley Alden Scott ⊕ **Lieut., M. C., U. S. Army,** San Antonio, Texas; University of Texas, Galveston, 1916; aged 30; formerly a member of the staff of the Southwestern Insane Asylum, San Antonio; on duty at Brooksfield, Texas; died at his home, November 12, from pneumonia following influenza.

Henry Courtney Evans ⊕ Youngstown, Ohio; Johns Hopkins University, Baltimore, 1900; aged 46; who served in the French Army, from January, 1916, to July, 1917, and was in charge of a base hospital at Ris-Organi, France, and was invalided home; died at his home, January 23, from pneumonia.

Theophilus Parvin Caplinger ⊕ **Major, M. C., U. S. Army,** Wallace, Ind.; Indiana Medical College, Indianapolis, 1907; aged 38; assistant medical chief at the base hospital, Camp Logan, Houston, Texas; died at that post, January 10, from peritonitis, four days after an operation for appendicitis.

Alfred N. Couture ⊕ Auburn, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1894; California Eclectic Medical College, Los Angeles, 1896; died in White Hospital, Sacramento, Calif., Dec. 26, 1918, from cholelithiasis, for the relief of which an operation had been performed.

John Woodley Wallace ⊕ Concord, N. C.; North Carolina Medical College, Charlotte, 1907; aged 35; one of the organizers of the Concord Hospital; a specialist in surgery; who was operated on in the Charlotte Sanitarium in December for appendicitis; died in that institution, January 9.

John Watson Sawyer, Dexter, Me.; Bowdoin Medical School, Brunswick and Portland, Me., 1894; aged 53; a member of the Maine Medical Association; for two terms a member of the legislature; formerly medical examiner (coroner) for Penobscot County; died at his home, January 22.

Albert Marinius Larson ⊕ **Lieut., M. C., U. S. Army,** Jasper, Minn.; University of Minnesota, Minneapolis, 1917; aged 29; on duty with the American Expeditionary Forces; died in American Red Cross Military Hospital No. 24, Mossley Hill, Liverpool, England, Oct. 13, 1918, from pneumonia.

Frank Blaisdell ⊕ Goffstown, N. H.; Dartmouth Medical School, Hanover, N. H., 1877; aged 66; formerly president of the New Hampshire Medical Society and of the New Hampshire Surgical Club; died at his home, January 16, from bronchopneumonia, following influenza.

Charles Arthur Robertson ⊕ **Lieut., M. C., U. S. Army,** Hopkinsville, Ky.; Vanderbilt University, Nashville, Tenn., 1917; aged 24; on duty with the American Expeditionary Forces in France; died, November 14, from lobar pneumonia following wounds received in action.

Albert George Bising ⊕ **Major, M. C., U. S. Army,** Weehawken, N. J.; College of Physicians and Surgeons in the City of New York, 1896; aged 48; on duty with the American Expeditionary Forces in France; died in Toul, France, Nov. 2, 1918, from pneumonia.

Frederic Weston Taylor ⊕ Cambridge, Mass.; Harvard Medical School, 1882; aged 62; visiting physician to Cambridge Hospital; a member of the Massachusetts Association of Boards of Health; died at his home, January 19, from heart disease.

Daniel P. Kennedy, Martinsville, Ind.; Eclectic Medical Institute, Cincinnati, 1870; aged 73; formerly mayor of Martinsville; secretary of the Board of Health; a veteran of the Civil War; died at his home, January 16, from cerebral hemorrhage.

Samuel McAlister Mauney ⊕ **Capt., M. C., U. S. Army,** Earl, Ark.; University of Tennessee, Nashville, 1914; aged 27; on duty with the American Expeditionary Forces in France; died at Nantes, France, November 1, from bronchial pneumonia.

James W. Graham, Washington, D. C.; George Washington University, Washington, 1877; a clerk in the patent office, Washington, since 1869; died at his home, January 13.

William John Davison ✠ **Lieut., M. C., U. S. Army,** New Castle, Pa.; Medico-Chirurgical College of Philadelphia, 1905; aged 35; on duty at Debarkation Hospital No. 3, New York City; died in New York City recently from pneumonia.

Willis E. White, Mayville, N. D.; Miami Medical College, Cincinnati, 1886; aged 68; a member of the North Dakota State Medical Association; died in a hospital in Fargo, N. D., January 21, from cerebral hemorrhage.

Christian Fry, St. Paul; University of Louisville, Ky., 1874; aged 68; a well known hotel proprietor in St. Paul; formerly a druggist in Indianapolis; died at Miami, Fla., January 19, from cerebral hemorrhage.

Alfred Atwater MacKeen, Whitman, Mass.; Bellevue Hospital, Medical College, 1879; aged 64; a member of the Massachusetts Medical Society; was killed in Whitman, in an automobile accident, January 18.

Frank Abbott Bucklyn, Mystic, Conn.; Medical and Surgical College of the State of New Jersey, Jersey City, N. J., 1890; aged 51; died at his home, Dec. 27, 1918, from pneumonia following influenza.

Lawrence Carl Freeny ✠ Pittsville, Md.; University of Maryland, Baltimore, 1900; aged 44; a specialist in surgery; died at his home, January 12, from peritonitis following an operation for appendicitis.

Edward Francis Phelan ✠ **Lieut., M. C., U. S. Army,** North Brookfield, Mass.; University of Vermont, Burlington, 1909; aged 32; on duty with the British army, overseas; is reported to have died recently.

Claude Matthew Barton, Homestead, Pa.; University of Louisville, Ky., 1901; aged 41; at one time a member of the Medical Society of the State of Pennsylvania; died at his home, January 17.

Clifford Kirkpatrick ✠ Adrian, Mich.; University of Michigan, Ann Arbor, 1881; aged 63; local surgeon of the Wabash Railroad; died at his home, Dec. 31, 1918, from peritonitis.

James Madison Earnst, Alliance, Ohio; Long Island College Hospital, Brooklyn, N. Y., 1875; aged 70; died in his rooms in Alliance, January 17, from cerebral hemorrhage.

Frank M. Stone, Shenandoah, Pa.; Jefferson Medical College, 1875; aged 60; was found dead in his room in the Mandous Hotel, Shenandoah, December 23.

Thomas Hugh Balfe, Hamilton, Ont.; Queens University, Kingston, Ont., 1892; aged 47; died at his home, November 5, from pneumonia following influenza.

Charles Henry Grimm, Sausalito, Calif.; Harvard Medical School, 1883; a ship surgeon for the Hind-Rolph Company, San Francisco; died at sea, January 3.

Horatio Havelock Hanson, Butte, Mont.; Columbus (Ohio) Medical College, 1881; aged 58; died at the home of his daughter in San Francisco, January 9.

Louis Vitkin, Victor, Idaho; Chicago College of Medicine and Surgery, 1913; aged 29; died at his home,, November 9, from pneumonia following influenza.

Charles Dennis Kelley ✠ Mount Vernon, N. Y.; University of Vermont, Burlington, 1894; aged 59; died at his home, January 17, from heart disease.

James B. Covey, Higginson, Ark.; Vanderbilt University, Nashville, Tenn., 1878; aged 68; died at his home, November 6, from pulmonary tuberculosis.

Almira Janette Wilson, Boston; Tuft's College Medical School, Boston, 1898; aged 58; died at her home, December 30, from arteriosclerosis.

Alexander Clayton Jacobs, Chicago; Marion-Sims Medical College, St. Louis, 1896; aged 44; died at his home, January 15, from influenza.

Henry P. Hargis, McCrory, Ark.; Memphis (Tenn.) Hospital Medical College, 1913; aged 56; died at his home, January 15, from tuberculosis.

Fred G. Ketchum, Springfield, Ill.; Hahnemann Medical College, Chicago, 1893; aged 54; died at his home, about January 9.

William Franklin Pollock ✠ Pittsburgh; Western Reserve University, Cleveland, 1871; aged 78; died at his home, January 14.

Robert Winfried McCarter, Pittsburgh; University of Pittsburgh, 1896; aged 57; died at his home, January 10.

Adelbert D. Tilden, Riverside, Calif.; Eclectic Medical Institute, Cincinnati, 1876; died at his home, January 11.

Warren Adams Wright, Readfield, Me.; Harvard Medical School, 1862; aged 81; died at his home, January 6.

The Propaganda for Reform

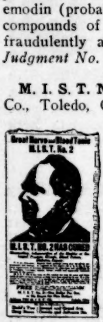
IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MISBRANDED NOSTRUMS

How the Bureau of Chemistry Is Protecting the Public Against Fraudulent or Misleading Advertised "Patent Medicines"

M. I. S. T. (Murray's Infallible System Tonic).—Sold by the M. I. S. T. Co., Toledo, Ohio. Analysis showed the product to contain mercury (probably in the form of calomel), emodin (probably from aloes), licorice, methyl salicylate, and compounds of iron, calcium and magnesium. Falsely and fraudulently advertised. Fine, $25 and costs.—[*Notice of Judgment No. 5890.*]

M. I. S. T. No. 2, Nerve Tonic.—Shipped by the M. I. S. T. Co., Toledo, Ohio. Analysis showed the sample to be a capsule consisting essentially of aloes, licorice, and other plant material, methyl salicylate, calomel and inorganic matter. Falsely and fraudulently adverised.[1] Fine, $25 and costs.—[*Notice of Judgment No. 5898.*]



Imperial Remedy.—Shipped by the Imperial Medicine Co., Houston, Texas. Analysis showed the product to consist essentially of a water-alcohol solution of glycerin, chloral hydrate, carbolic acid, benzoic and salicylic acids. Falsely and fraudulently advertised. Fine, $100.—[*Notice of Judgment No. 5893.*]

"Japanese Wild Cherry Cough Syrup," and "Japanese Herb Laxative Compound."—Shipped by Torata Tanaka, who traded as the Japanese Remedy Co., St. Louis. Analysis of the "Cough Syrup" showed it to consist essentially of a water-alcohol solution of plant material and menthol, while that of the "Laxative Compound" was found to be essentially a dilute water-alcohol solution of plant material bearing emodin. Both were falsely and fraudulently advertised. Fine, $75 and costs.—[*Notice of Judgment No. 5836.*]

Dr. E. E. Burnside's Purifico.—Shipped by Charles W. and Pearl B. Diffin, copartners, who traded as the Purifico Co., Buffalo. Samples of "Purifico Nos. 1, 2 and 3" were analyzed. "No. 1" was found to contain 10 per cent. of alcohol, with sugar, small amounts of glycerin, potassium iodid, cinchona alkaloids, piperin and emodin (probably senna). "No. 2" was found to contain 9 per cent. of alcohol, sugars, small amounts of glycerin, potassium iodid, cinchona alkaloids and piperin. "No. 3" was found to contain 14 per cent. of alcohol, sugars, valerian, piperin and tannic acid. All three products were falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5896.*]

Emerald Oil.—Shipped by the Moone Chemical Co., Rochester, N. Y. Analysis showed the sample to be essentially a solution of camphor, carbolic acid and oil of sassafras. Falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5897.*]

Bristol's Sarsaparilla.—Shipped by Mary Augusta, Edward, and Edward Charles Mears Kemp, who did business as Lanman and Kemp, New York City. Analysis showed the product

1. This preparation was analyzed by the Chemical Laboratory of the American Medical Association, and the results published in the Propaganda department of THE JOURNAL, July 31, 1915. The matter is reprinted in the pamphlet, "Miscellaneous Nostrums," published by the American Medical Association, price 15 cents.

to consist essentially of a water-alcohol solution of potassium iodid, sugar and plant extractives, with indications of sarsaparilla and arbutin. Falsely and fraudulently advertised. Fine, $50.—[*Notice of Judgment No. 5822.*]

Dr. Belding's Six Prairie Herbs.—Shipped by the Dr. Belding Medicine Co., Minneapolis. Government chemists reported that the odor and taste suggested that of highly diluted and sweetened whisky, with a very small amount of some indifferent herb or herbs. Falsely and fraudulently advertised. Fine, $10.—[*Notice of Judgment No. 5895.*]

Dr. Carter's K. & B. Tea.—Shipped by S. C. Wells & Co., Le Roy, N. Y. Analysis showed the product to consist of senna, liverwort, and wintergreen leaves and juniper berries, with buchu and boneset leaves and possibly uva ursi (bearberry) leaves. Falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5904.*]

"Brazilian Balm" and "Renal Tea."—Shipped by Benjamin F. Jackson, who traded as B. F. Jackson & Co., Arcade, N. Y. Analysis showed the "Brazilian Balm" to contain essentially water, alcohol, glycerin, sugar, aconitin and berberin, flavored with methyl salicylate. The "Renal Tea" was found to consist of plant material. Both were falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5929.*]

Las-I-Go for Superb Manhood.—Shipped by Wm. J. Bailey and Wm. Veeler, trading as the Lakeside Medicine Co., Chicago. Analysis showed this preparation to be a pill that was essentially a slight variation of the ordinary Blaud's pill with strychnin. Falsely and fraudulently advertised. Fine, $200 and costs.—[*Notice of Judgment No. 5932.*]

Blood Tabs.—Shipped by the Reese Chemical Co., Cleveland. Analysis showed the preparation to consist of brownish, sugar-coated pills, containing carbonate of lime, the interior being a pasty mass containing sulphates and carbonates of iron and potassium, also iodid of potassium, glycerin, and reducing sugar. Falsely and fraudulently advertised. Fine, $25 and costs.—[*Notice of Judgment No. 5596.*]

Dr. Mile's Restorative Nervine.—Shipped by Charles Franklin Miles, Andrew H. Beardsley and Albert R. Beardsley, trading as the Dr. Miles Medical Co., Elkhart, Ind. Analysis showed the product to consist essentially of a watery solution of sugar, benzoic acid, arsenic, and bromids and chlorids of ammonium, calcium, potassium and sodium, colored and flavored. Falsely and fraudulently advertised.[1] C. F. Miles fined $200 and costs and A. R. and A. H. Beardsley each fined $100 and costs.—[*Notice of Judgment No. 5891.*]

Kilmer's Swamp Root.—Consigned by Dr. Kilmer & Co., Binghamton, N. Y., to Porto Rico. Falsely and fraudulently advertised (in labels and circulars printed in German, Spanish, Italian, Portuguese and French) as a treatment for Bright's disease, acute nephritis, cancer of the liver, acute and chronic gonorrhea, etc. Court ordered entry of a decree of condemnation and forfeiture, and the product was delivered to Dr. Kilmer & Co., after the concern had paid the costs of the proceedings, and given a bond for $150.—[*Notice of Judgment No. 5946.*]

Homenta.—Shipped by the New York Drug Concern (Laurence E. Cash), New York City. Analysis showed the product to be a dark-colored liquid with a small amount of oil floating on the top or emulsified, and consisting essentially of menthol, thymol, ammonia, sugar (over 61 per cent.), water and alcohol (4.6 per cent.). Falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5702.*]

Hinkley's Bone Liniment.—Shipped by the Hinkley Bone Liniment Co., Saginaw, Mich. Analysis showed the sample to be a water-alcohol solution of volatile camphoraceous oil, with indications of red pepper. Falsely and fraudulently advertised. Fine, $50.—[*Notice of Judgment No. 5945.*]

Kopp's Baby's Friend, Kopp's, and Kopp's Kidney Pills.—Shipped by the Kopp's Baby's Friend Co., York, Pa. Analyses showed the "Baby's Friend" and "Kopp's" to be a syrup containing alcohol, morphin, and aromatic substances.[2] The "Kidney Pills" were found to contain chiefly methylene blue, juniper, and unidentified matter. All three were falsely and fraudulently advertised. Fine, $25 and costs.—[*Notice of Judgment No. 5646.*]

Reuter's Syrup.—Shipped by Barclay & Co., New York City. Analysis showed the product to be essentially a water-alcohol solution of sugar, aromatics, and a cathartic drug. Falsely and fraudulently advertised. Fine, $100.—[*Notice of Judgment No. 5647.*]

Garfield Tea.—Shipped by the Garfield Tea Co., Brooklyn. Analysis showed the preparation to consist essentially of senna leaf and triticum (cough-grass), a small amount of valva (mallow) flowers and fruits, and mint stems; also traces of unidentified plant tissue, and a small amount of a substance resembling manna. Falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5670.*]

Di-Col-Q.—Shipped by the New York Drug Concern (Laurence E. Cash), New York City. Analysis showed the product to consist essentially of pine oil, chloroform, mineral oil, and a green dye. Falsely and fraudulently advertised. Fine, $25.—[*Notice of Judgment No. 5703.*]

Sloan's Liniment.—Sold by Dr. Earl S. Sloan (Inc.), Philadelphia. Analysis showed the preparation to be a reddish liquid containing essentially turpentine, a light oil having the characteristic of kerosene or coal oil, oil of sassafras, oleoresin of capsicum with indications of pine oil. Falsely and fraudulently advertised. Fine, $50.—[*Notice of Judgment No. 5659.*]

Bannerman's Intravenous Solution.—Shipped by William Bannerman & Co., Chicago. Adulterated in that its strength and purity was below that claimed; misbranded because it was falsely and misleadingly labeled.[3] Fine, $25 and costs.—[*Notice of Judgment No. 5664.*]

Cummings Blood Remedy.—Shipped by Edwin D. Richardson, who traded as F. P. Cummings Co., Roanoke, Va. Analysis showed the stuff to contain over 20 per cent. of alcohol with plant extractives, sarsaparilla, potassium iodid, and sugar. Falsely and fraudulently advertised. Fine, $50.—[*Notice of Judgment No. 5684.*]

Giles' Germicide.—Shipped by the Giles Remedy Co., Chicago. Analysis showed the preparation to be an oily mixture containing chiefly linseed oil, ether and camphor. Falsely and fraudulently advertised. Fine, $50.—[*Notice of Judgment No. 5639.*]

1. This fraudulently advertised nostrum was analyzed by the A. M. A. Chemical Laboratory in 1916 and the report published in the Propaganda department of THE JOURNAL, Sept. 9, 1916. The matter is reprinted in the pamphlet "Epilepsy Cures," price 10 cents.

2. The "baby killer," "Kopp's Baby's Friend," was analyzed by the American Medical Association in 1905. A list of deaths and poisonings from this product is given in "Nostrums and Quackery," 2d edition.

3. This preparation was the subject of a report of the Council on Pharmacy and Chemistry which appeared in THE JOURNAL A. M. A., Jan. 2, 1915, and is reprinted in the "Propaganda for Reform" (9th Edition).

Correspondence

MISLEADING CERTIFICATES FOR CLINICAL THERMOMETERS

To the Editor:—It has been brought to the attention of the Bureau of Standards that clinical thermometers are regularly being sold with certificates of accuracy issued by manufacturers and dealers which either by direct statement or indirectly by skilful wording lead the purchaser to believe that the thermometers have been tested or certified by the United States Government.

An examination of the accompanying reproductions of certificates indicates very clearly the reason for the misunderstanding. Note the similarity between the older form of government certificate shown in Figure 1 and the three forms of manufacturer's certificates shown in Figure 2.

The words "National Bureau of Standards" are very prominent on these manufacturer's certificates, and the name of the maker is omitted entirely. In fact, nine out of ten persons reading any one of these certificates would fail to note that the complete statement is to the effect that the clinical thermometer has been compared with *our standards* corrected by National Bureau of Standards. "Our" refers to the standards of the manufacturers of the instruments; and while the validity of the statement is difficult to prove or disprove, since certified clinical standards may have been furnished the manufacturers, the reliability of the thermometer depends solely on the manufacturer, who may or may not have carefully tested the instrument. That many manufacturers do not make such careful tests is indicated by the fact that while practically all of such certificates show correct readings at all points, actual tests of the instruments show that only a very small percentage read correctly at all points on the scale.

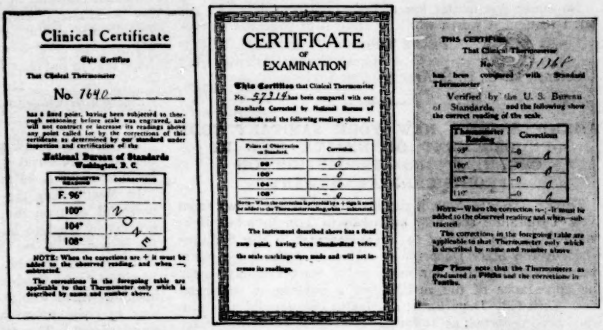

Clinical Certificate
No. 7640
National Bureau of Standards
Washington, D. C.
CERTIFICATE
OF
EXAMINATION
This Certifies that Clinical Thermometer
No. 57314 has been compared with our
Standards Corrected by National Bureau of
Standards and the following readings observed:
The instrument described above has a fixed
zero point, having been Standardized before
the scale markings were made and will not in-
crease its readings.
THIS CERTIFIES
That Clinical Thermometer
No. 7846
has been compared with Standard
Thermometer
Verified by the U. S. Bureau
of Standards, and the following show
the correct reading of the scale.

Fig. 2.—Types of misleading clinical thermometer certificates issued by manufacturers and dealers.

The Bureau of Standards has not taken the position that manufacturers should not issue certificates for thermometers, provided the certificates are the result of careful testing, are not deceptively worded, and bear the manufacturer's name.

There are reliable manufacturers turning out high grade instruments who issue their own certificates over their own names. These manufacturers are being done an injustice by their competitors, who, without even testing a thermometer, boldly state that it has no errors and is sold in accordance with the requirements of the United States Government.

Only recently the bureau was requested to replace or refund the money paid for a clinical thermometer which the purchaser had inferred from the certificate (one of those shown) had been tested and guaranteed by the government.

The certificate dated Sept. 22, 1917, shown in Figure 1, is the form now issued by the National Bureau of Standards unless the other form is specifically requested. The distinctive form should be noted. The seal of the Bureau of Standards appears over the face of the certificate. Up to this time no counterfeits of this new form have been brought to the bureau's attention.

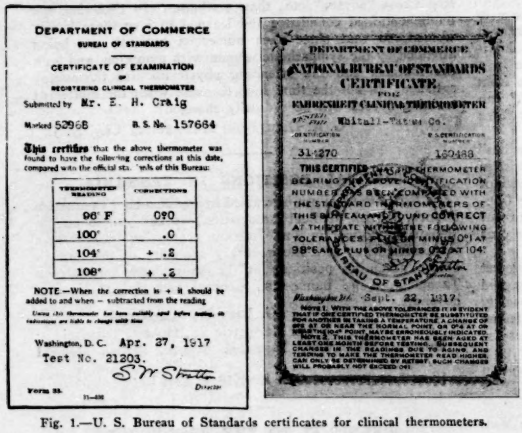

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
CERTIFICATE OF EXAMINATION
OF
REGISTERING CLINICAL THERMOMETER
Submitted by Mr. E. H. Craig
Marked 52968 B. S. No. 157684
This certifies that the above thermometer was found to have the following corrections at this date, compared with the official standards of this Bureau:
NOTE—When the correction is + it should be added to and when — subtracted from the reading.
Washington, D. C. Apr. 27, 1917
Test No. 21203.
DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CERTIFICATE
FOR
FAHRENHEIT CLINICAL THERMOMETER
31270
THIS CERTIFIES THAT THE THERMOMETER BEARING THE IDENTIFICATION NUMBER ABOVE HAS BEEN COMPARED WITH THE STANDARD THERMOMETERS OF THIS BUREAU AND FOUND CORRECT AT THIS DATE WITHIN THE FOLLOWING TOLERANCES: ZERO MINUS 0°1 AT 98°4 AND PLUS OR MINUS 0°2 AT 104°
BUREAU OF STANDARDS
Washington, Sept. 22, 1917.

Fig. 1.—U. S. Bureau of Standards certificates for clinical thermometers.

The Bureau of Standards has issued a publication (Circular No. 5) on the testing of clinical thermometers, which will be sent to any one sufficiently interested. The publication answers more in detail some of the questions touched on in this letter and contains considerable additional information in regard to clinical thermometers.

The bureau hopes that you will consider this matter of sufficient interest to your readers to warrant publication of this letter, or otherwise giving publicity to this question in THE JOURNAL.

S. W. STRATTON, Washington, D. C.
Director, Bureau of Standards, Department of Commerce.

ADVANTAGE OF PRINTING ON ALTERNATE PAGES

To the Editor:—The busy physician nowadays resorts a great deal to the collection of data under specific heads for future reference, and for this reason is prone to take clippings from medical journals and file them under titles of subjects in matters wherein he is particularly interested. Only in those cases in which the physician has at his disposal paid clerical assistants for the purpose of this classification could he, in the present situation, have made a card index to articles in medical journals. Speaking from my personal experience, I find it much more satisfactory to cut out the article and file it in an envelop under the title of the subject. This being the case, it is somewhat troublesome in cutting out a valuable article to find on the opposite side of the page all or part of another equally valuable article on a different topic, which necessitates having a typewritten copy of the page made to go with the second article.

It would be a great advantage to me personally, and I believe to many others, if THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION should inaugurate the practice of publishing the contents of THE JOURNAL on the right hand page and utilize the left hand page for advertisements instead of grouping advertisements at the beginning and end of the book. This would have the double advantage of making the advertising space more valuable and of permitting the physician to clip freely interesting articles wherever he might find them.

No doubt this matter has already been considered by you, but I thought it worth while to bring it to your attention.

FRANK THOMAS WOODBURY, M.D.,
Camp Gordon, Atlanta, Ga.
Colonel, M. C., U. S. Army; Camp Surgeon.

AMENDMENT TO NEW YORK SANITARY CODE —ENDORSEMENT OF HEALTH BILL BY ORGANIZATIONS—RESOLUTION ON PROHIBITION AMENDMENT

To the Editor:—Among the items of Medical News from New York State and City published in THE JOURNAL, February 1, is one relating to an amendment to the Sanitary Code by the State Department of Health making the minimum isolation period for measles "at least five days after the appearance of the rash." For a number of years the New York City Department of Health circularized all those who were reported as suffering from measles to the effect that they could return to school "three days after the appearance of the rash," provided they were free from other symptoms of the disease. Attention being called to this statement, as we thought it was probably a misprint for "disappearance of the rash," a change was made to the effect that sufferers could return to school five days after the appearance of the rash, which is the period of isolation now adopted by the state department of health. Whatever may be the experience of public health officials which permits them to send hundreds of thousands of circulars every year to families afflicted with measles, permitting a return to school in from three to five days after the appearance of the rash, I venture to say that such experience is not duplicated at the bedside by the practicing physician once in a thousand times. In this field the measles patient who from three to five days after the "appearance of the rash" can safely be permitted or advised to return to school or work is as rare as the Irishman's "white blackbird."

Another item related to the action of 400 or 500 "bodies" in New York, represented by a council of organizations, in endorsing the Rankin-Robinson bill for the preservation of the existing bureaus of industrial hygiene, now before Congress. Although no distinctive names are mentioned for these bodies, they belong to the clan known collectively as "busybodies." This was omitted from publication.

One item of medical news that might perhaps interest the readers of THE JOURNAL is contained in the enclosed resolution presented at the meeting of the Medical Society of the County of New York, Jan. 27, 1919, which was referred to the Committee on Public Health. It is the first resolution, as far as I am aware, that has been presented to a medical body in opposition or in favor of the prohibition amendment to the constitution of the United States. Its presentation was noted in the chief papers.

Resolved, That the Medical Society of the County of New York opposes the ratification by the legislature of New York of the measure now before it for national prohibition as irrational, unscientific, and in opposition to the accepted usage of all civilized nations throughout the world, and as putting upon the medical profession the burden of prescribing and dispensing alcoholic beverages of proved therapeutic worth, while allowing the unlimited sale to the public of "patent," proprietary and quack remedies containing alcohol in varying amounts without control or hindrance by the officers of the state.

Its publication in THE JOURNAL should be of interest to your readers throughout the country.

JOHN P. DAVIN, M.D., New York.

"THE SUPPLY OF PRACTICAL NURSES"

To the Editor:—I am delighted with the editorial in THE JOURNAL, January 25, on the nursing profession. It is true, every word of it. I hope something will come of it.

CHARLES V. CHAPIN, M.D., Providence, R. I.
Superintendent of Health.

To the Editor:—I want to congratulate you on the very excellent editorial in THE JOURNAL, January 25, on the nursing situation. It seems to me to cover the subject very thoroughly, and should be the means of stirring up our profession all over the country to action on an unbearable situation. I hope that in the near future you will see it produce this effect.

HUGH N. MACKECHNIE, M.D., Chicago.
Secretary, Chicago Medical Society.

To the Editor:—I want to congratulate THE JOURNAL on the recent editorial on "The Supply of Practical Nurses," because there is so much of truth in it.

In New Jersey the Alumni Association of Nurses has a powerful grip on the politicians. Last winter the medical profession tried to have a law enacted which would throw the responsibility on the hospital that had nurses in training. Nothing was prohibitive in this measure on the applicant. She was to be tried out in her period of probation, but the hospital which would be allowed to have a training school was to come up to a standard. The training was to be standardized. The training in the school was also to be improved by having more ward and bedside work than mere brain stuffing. There was to be an inspectress who would report to a central governing body, and each year the status of the training schools was to be published. The nurses killed this effort. As a result the nursing profession is somewhat autocratic. There are not enough nurses for our work. The poor man cannot afford one. Most of the graduates become institutionalized, and the man sick in bed is neglected.

During the epidemic our hospitals had more kindly women, Red Cross "nurses," etc., than graduates. In that time the public obtained confidence and learned to love these kindly women, so that since then numerous patients are being attended by the sympathetic woman with gumption, and both the families and the attending physicians are thoroughly satisfied. Is not the time soon to come when the matter of training nurses will be radically changed?

G. K. DICKINSON, M.D., Jersey City, N. J.

HOSPITAL POSITIONS IN TASMANIA

To the Editor:—I am instructed by my council (Tasmanian Branch, British Medical Association) to ask you to put an "important notice" in THE JOURNAL requesting practitioners to communicate with the honorary secretary of this branch before accepting positions in the state-aided hospitals in Tasmania, e. g., Launceston General and Hobart General hospitals.

G. BRETTINGHAM-MOORE,
149 Macquarie St., Hobart, Tasmania.
Honorary Secretary, Tasmania Branch, British Medical Association.

[See THE JOURNAL, Oct. 12, 1918, p. 1241.]

CREDIT IT TO THE POSTOFFICE

To the Editor:—Just a word of thanks for the regularity with which you have mailed my copy of THE JOURNAL overseas. It has certainly been a pleasure to read its contents in this life, conspicuous for the absence of medical literature. On the banks of the Vesle and the Aisne, in the woods of the Argonne and up to the gates of Sedan it has been my good fortune to read its interesting articles.

C. M. FRANCHEN, M.D., A. E. F.
First Lieutenant, M. C., 308th Ambulance Company.

THE TONGUE IN THE PRESENT INFLUENZA EPIDEMIC

To the Editor:—My experience and observations have led me to the conclusion that there is much to be learned from inspection of the tongue, even at the first call, in a suspected case of influenza. Special reference to the tongue will disclose a series of almost remarkable phenomena, so uniform in appearance as to be pathognomonic of influenza and all but a positive factor in the chain of diagnostic symptoms (objective, of course). These symptoms appear early in the course of the disease, near the second or third day of the onset or within the limit of seventy-two hours. In no other disease does the tongue present such an appearance except in typhoid in the second or third week. The tongue is long, wide, thick, broad and flat, not curled as to its point or lateral edges. The edges are often tooth indented. Its color is of a characteristic bluish white or flat white. It is not furred but smooth, not shiny, rather moist, but not wet or yet dry. It has the appearance of being swollen, almost filling the mouth, and is protruded with some difficulty.

D. WEBSTER EVANS, M.D., Scranton, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CALCIUM CHLORID IN INTESTINAL TUBERCULOSIS

To the Editor:—In THE JOURNAL, January 18, p. 234, is an abstract concerning calcium chlorid in intestinal tuberculosis. No mention is made of the amount of calcium chlorid injected, and whether other measures were used with it. In what way could we obtain a more comprehensive translation or abstract of the outline of treatment?

E. S. MARIETTE, M.D., Hopkins, Minn.

To the Editor:—In THE JOURNAL, January 18, there is a short paragraph on the use of calcium chlorid in intestinal tuberculosis, and we should like to know more about the technic and treatment as explained by Saxtorph. The article appeared in the *Ugeskrift for Læger* **80**: 1763 (Nov. 7) 1918.

E. K. RICHARD, M.D.,
Bell's Camp, Pa.

ANSWER.—The amounts injected varied. All the patients had pulmonary tuberculosis and tuberculous enteritis and were under sanatorium treatment. One man of 34 was given two injections of 5 gm. each of the 5 per cent. solution of calcium chlorid. The abdominal pains subsided the second day after the first injection, and the stools were permanently normal thereafter for the month the patient was still under observation. The diarrhea was of six months' standing, and the patient attributed it to the tuberculin he had been given at first. One young woman was given the same dose, 5 gm., and the diarrhea and colics were arrested the following day but returned a week later. Opium gave no relief. She was given a second injection thirteen days later, but the diarrhea and pains returned in three weeks, and a third injection of 10 gm. was given. Then in the course of a few days the diarrhea and pains disappeared for a period of a month. Then 10 gm. were injected anew, with the same benefit, one formed stool a day and no pains. Another young woman with diarrhea not checked by opium was given an injection of 3 gm. without benefit, the diarrhea increasing to six stools a day. The fifth day an injection of 10 gm. was made, and since this the bowel conditions have been clinically normal. Two patients 15 years old showed only briefly transient or no benefit under two or three injections of 5 gm. and even 10 gm. The injections also failed to relieve a man of 21 with tuberculous laryngitis besides his pulmonary and bowel lesions. Three injections in this case of 2, 7 and 5 gm. failed to modify in the least the abdominal pains and frequent diarrhea. None of the patients were under observation for more than five weeks after the last injection. No other medication is mentioned. Saxtorph ascribes the benefit from the calcium chlorid to its action on the sympathetic system, checking peristalsis. As mentioned in the abstract on page 234, the injection is made in a vein in the arm, a 5 per cent. solution of calcium chlorid being employed.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, March 4. Sec., Dr. L. P. Dawes, Juneau.
CALIFORNIA: Los Angeles, March 17-20. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.
CONNECTICUT: New Haven, March 11-12. Sec. Reg. Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 730 State St., Bridgeport, and Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven
ILLINOIS: Chicago, March 3-5. Mr. F. C. Dodds, Supt. of Registration, Springfield.
INDIANA: Indianapolis, Feb. 26-28. Sec., Dr. W. T. Gott, 84 State Capitol Bldg., Indianapolis.
KANSAS: Topeka, Feb. 11. Sec., Dr. H. A. Dykes, Lebanon.
MASSACHUSETTS: Boston, March 11-13. Sec., Dr. W. P. Bowers, Rm. 501, No. 1 Beacon St., Boston.
NEBRASKA: Lincoln, Feb. 12. Sec., Dr. H. J. Lehnhoff, 514 First Natl. Bank Bldg., Lincoln.
NEW HAMPSHIRE: Concord, March 13-14. Sec., Dr. Charles Duncan, Concord.
VERMONT: Burlington, Feb. 11. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Moorcroft, Feb. 12-14. Sec., Dr. H. E. McCollum, Laramie.

West Virginia November Examination

Dr. S. L. Jepson, health commissioner, West Virginia State Department of Health, reports the oral, practical and written examination held at Charleston, Nov. 19-21, 1918. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 11 candidates examined, 8 passed and 3 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1918)	84.6, 86.7
University of Louisville	(1909) 80.2;	(1918)	83.6
University of Maryland	(1917) 83.1, 83.4;	(1918)	87.3
Eclectic Medical College		(1918)	86.5
	FAILED		
National Medical University		(1909)	65
Chattanooga Medical College		(1904)	62
Vanderbilt University		(1894)	67.6

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1915)	Georgia
University of Louisville		(1907)	Kentucky
Baltimore University		(1902)	Virginia
Eclectic Medical College		(1917)	Ohio
Medical College of Ohio		(1890)	Kentucky
University of Wooster		(1887)	Ohio
Meharry Medical College		(1917)	Kentucky
University of Tennessee		(1900)	Kentucky
University of Vermont		(1904)	Oklahoma

New Jersey December Examination

Dr. Alexander MacAlister, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Dec. 3-4, 1918. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Twenty-nine candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland		(1917)	85.3
University of Pennsylvania		(1917)	86.1
	FAILED		
University of Naples		(1905)	70.7

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Columbian University		(1904)	Maryland
Howard University	(1904) South Carolina;	(1914)	Virginia
College of Physicians and Surgeons, Chicago		(1905)	Illinois
Baltimore Medical College	(1898) Pennsylvania;	(1906)	New York
College of Physicians and Surgeons, Baltimore		(1904)	Penna.
University of Maryland	(1917) Delaware;	(1917)	Maryland
Harvard University		(1891)	New York
University of Michigan Homeo. Med. School		(1914)	Michigan
Columbia University	(1903) (1908) (1916)	(1917)	New York
Long Island College Hospital		(1904)	New York
New York Homeo. Med. Coll. and Flower Hosp.		(1915)	Delaware
		(1914) (1916)	New York
New York University		(1898)	New York
University and Bellevue Hospital Medical College		(1905) (1917, 2)	Maine New York
Hahnemann Med. Coll. and Hosp. Philadelphia		(1914)	Maryland
Jefferson Medical College	(1896) (1904) Penna.;	(1916)	R. Island
		(1917)	New York
University of Toronto		(1905)	New York

Book Notices

Surgical Treatment: A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M.D., Surgeon to the Wyckoff Heights Hospital. In 3 volumes. Cloth. Price, $30 per set. Philadelphia: W. B. Saunders Company, 1918.

A three volume work such as this by a single author is a large undertaking; but Dr. Warbasse seems to have succeeded in giving us a rational and comprehensive presentation of surgical treatment. If there is any criticism to be made of his work, it is that there is so much included that the author's individuality and opinion on the various subjects considered is in many cases not easily ascertained. The work has avoided a large amount of duplication which usually occurs in works of composite authorship. Volume I presents the theory and principles of surgery, the treatment of lesions of the blood and lymphatic vessels, fractures and dislocations, tumors, and diseases of the bones, joints, muscles, tendons, nerves, and of the skin and its appendages. Volume II includes the surgery of the head, spine, neck, thorax, breast and abdomen. As stated in the preface, the work contains few references to the discoverers of methods and of instruments, because a continued search of the literature has revealed the fallacy of proper name nomenclature in surgery; most instruments and procedures bearing proper names were used before the time of the individual whose name they bear. This is a matter requiring good judgment, since we are governed in these matters largely by general usage. For example, the Murphy drip, although not original with Dr. Murphy but popularized by him, is better described by the term "drip method proctoclysis." On the other hand, incision of the pylorus in pylorospasm has come to be known as the Rammstedt operation and is so described in indexes. Dr. Warbasse does not call this the Rammstedt operation, although he describes the method. Incidentally he credits it with some beneficial results without, however, stating any of the possible dangers.

It is a question whether it is advisable to state (page 299) that "self healing" of syphilis occurs, and that "an otherwise healthy person who leads a hygienic life may recover from syphilis without treatment," since such cases are at best of extremely rare occurrence. In his description of tests for lysis and agglutination preliminary to blood transfusion, the author does not describe the methods which recently have been given the greater preference by military surgeons. He agrees with most surgeons that the most simple, useful and effective method of transfusion is the citrate method.

The books are well printed and excellently illustrated with numerous good halftones and a number of colored illustrations. Incidentally there are a few illustrations that might well be omitted, since the objects illustrated are common. Figure 5 illustrates a bedpan; Figure 6, a douchepan; Figure 164 is just a plain, common, ordinary icebag. It is certainly desirable to use illustrations freely in medical, as well as in other literature; but this, like anything else, may easily be overdone. However, these are minor criticisms of what is on the whole a well prepared, thorough and exceedingly practical work.

Oxford Loose-Leaf Surgery. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Colonel, A. M. S., Lecturer on Surgery and Surgeon to King's College Hospital, London, and Allen B. Kanavel, A.B., M.D., F.A.C.S., Lieut. Col. U. S. A., Associate Professor of Surgery Northwestern University Medical School, Chicago. In five volumes. Volume One. Cloth. Price, $52.50 per set. Pp. 971, with 354 illustrations. New York: Oxford University Press, 1918.

The first volume of this system of surgery deals with general surgery, among the contributors being Percy Sargent, D'Arcy Power, F. F. Burghard, W. Sampson Handley, Robert Jones, and among American surgeons, Dunlap Pearce Penhallow, N. M. Percy and Richard Lewisohn. This volume concerns such subjects as the principles and technic of aseptic surgery, gunshot wounds, the Carrel-Dakin method, antiseptics, anesthetics, amputations, blood transfusion, ligations, surgery of the lymphatics, and injuries of the joints. In the preface the editors state that originality and individuality will be sought rather than a colorless enumeration of operative procedures, and that categorical enumeration of operations of merely historical interest will be avoided. Nevertheless, much of the material in this volume is of the same stereotyped character as occurs in most textbooks on surgery. This, of course, refers particularly to the discussion of the elementary factors and the ordinary ligations and amputations.

Chapter V, on the subject of syphilis, has in it very little of special surgical interest, and might just as well appear in any book on any phase of medicine, being simply an ordinary statement on the subject. This section is not complete, and far better statements on syphilis appear in many textbooks. This applies particularly to that portion of the article referring to tabes and to the section on the luetin test. It would appear to be time already for a new loose leaf section on surgical syphilis. Chapter I of the second section, concerning infiltration and anesthesia, is practically a full abstract of Barker's papers published in the *British Medical Journal* in 1904 and 1907, together with the present experiences of the writer, J. W. H. Houghton. Chapter IV in this section, by P. L. Guiseppi, on scopolamin-morphin anesthesia in obstetrics, asserts that such anesthesia is practically safe with ordinary precautions, and that the only danger is that of stillbirth. This chapter would also appear to call for a new loose leaf section, since it is at least a few years out of date. Chapter VII of this section is entitled "Diet in Surgery," certainly a large title for three pages of material consisting of a few words on rectal feeding and the Lenhartz diet, and from twenty-five to thirty lines on diabetic diet before operation. Most of the remaining sections of the book are practical and well illustrated, following, however, the usual lines for books on general surgery. An exception is the eighth section on injuries of the joints. This is prepared by Sir Robert Jones of Liverpool, and is characteristically terse and authoritative, probably the most valuable section of the first volume.

This textbook is an innovation in medical book publishing, although the loose leaf idea has already been applied to an encyclopedia of general nature. Such success as it achieves will probably depend on the character of the supplements to be issued, their frequency, and the proper use of such supplements by libraries and subscribers. On the whole, the book is well printed and illustrated and marks the beginning of what must be regarded as an interesting venture in medical publication.

Gun-Shot Fractures of the Extremities. By Joseph A. Blake, Lieutenant-Colonel, Medical Corps, U. S. A. Paper. Price, 4 francs. Pp. 136, with 40 illustrations. Paris: Masson & Cie, 1918.

This is one of the most instructive monographs summarizing the treatment of gunshot wounds. Dr. Blake's experience peculiarly fits him to write such a book. His wide experience as a general surgeon before the war and his opportunity of studying this subject during the war, coupled with his ability to weigh all the evidence and arrive at a judicial opinion, give his conclusions great weight. The monograph is divided into two sections: The first one treats of the general topics of the mechanism and varieties of gunshot fractures, the repair of fractures, the transport and operative treatment of fractures in general, and mechanical treatment. The second section, on special fractures, takes up the subject of diaphysial fractures and fractures and wounds of joints. The book is the result of an intensive study covering four years and a large amount of material, and of the work Dr. Blake did in the American Ambulance Hospital and later with the American Expeditionary Forces. He presents rather fully the great value of the proper handling of fractures of the extremities for transport, and emphasizes the importance for this purpose of the Thomas traction splints for both the upper and the lower extremities. He describes fully the greatest lesson that has been taught to surgeons by this war, the possibility of sterilizing a gunshot wound by clean dissection and by removing all of the injured tissue and foreign bodies, making it possible to secure in this way primary union in from 80 to 90 per cent. of the cases if this is properly done in the period of contamination in the first six or eight hours after receipt of the injury. He points out the necessity

of saving all attached bony fragments, and the futility of bone plating and the leaving of foreign material in the wound.

The discussion of fractures of the femur is accompanied by excellent illustrations of the modified Thomas traction leg splint and of the Hodgen leg splint, and of suspension frame for fractures that was devised and perfected at the American Ambulance Hospital, planned for the purpose of suspension and for traction apparatus on the limbs, and so arranged that direct extension and lateral traction can be employed at the same time.

The chapter on fractures and wounds of the joints is of special value. Blake states that the experience during the war has unequivocally proved that the ideas formerly prevalent concerning the extreme susceptibility of the synovial membrane were erroneous, and describes how by good technic in the removal of foreign bodies and injured tissues these joint wounds can be mechanically sterilized and closed with an excellent prospect of securing primary union and good functional results. In civil practice we of course do not have the enormous number of gross traumatisms of the extremities that we encounter in time of war; but essentially the same sort of injuries of bones and joints occur in railroad accidents and in industrial injuries, in automobile accidents, etc., and these require the application of the same general principles that have been emphasized by the experience of the war.

It would be of advantage to general surgeons who have to assume the responsibility of handling these serious injuries to read Blake's monograph and give their patients the benefit of the great advances that have been made in handling these injuries through the experience gained by surgeons in this war.

TUMOURS, INNOCENT AND MALIGNANT: THEIR CLINICAL CHARACTERS AND APPROPRIATE TREATMENT. By Sir John Bland-Sutton, LL.D., F.R.C.S., Surgeon to, and Chairman of the Cancer Investigation Committee of, the Middlesex Hospital. Sixth edition. Cloth. Price, $7. Pp. 790, with 383 illustrations. New York: Paul B. Hoeber, 1918.

In our note on the fourth edition of this work, it was pointed out that it was not a book that would give satisfaction to a pathologist, since the discussions of the histology of tumors are not satisfactory, and the illustrations are line drawings and woodcuts of only average workmanship. The sixth edition has been somewhat extended by the addition of new material, but no improvement has been made in these two primary weaknesses. Some eighty new illustrations have been added, but these are of the same class as the earlier illustrations. We would emphasize what was said in our previous review, viz., that the lists of literature appended to each chapter are of little value since the references are incomplete and confined almost wholly to a few British publications with only here and there a reference to literature of other countries. The book is interesting primarily for its general consideration of the various types of tumors, particularly with reference to comparative pathology. As the author says, without the aid of comparative pathology, attempts to catch the deeper meaning of many tumors are as difficult as endeavors to decipher a palimpsest in which the first characters, written in an unknown tongue, have been imperfectly removed from the parchment, and are allowed to mingle with the second inscription.

MENTAL DISEASES: A HANDBOOK DEALING WITH DIAGNOSIS AND CLASSIFICATION. By Walter Vose Gulick, M.D., Assistant Superintendent Western State Hospital. Cloth. Price, $2. Pp. 142, with illustrations. St. Louis: C. V. Mosby Company, 1918.

The subtitle states that this book deals with diagnosis and classification. It does, to the extent of about eighty-seven pages of text. The introduction informs us that "this little book" is a response to a need for "concise, digested information." But brevity is not a synonym for conciseness. The contribution is brief but the style is not concise. Nor is the information digested. This "handbook" is about the size of a quiz compend, without the latter's condensed and systematic information. Those desiring a sketchy smattering of not very accurate knowledge of mental disorders may perhaps be satisfied with this work. Thirty-five photographs of insane patients adorn the work but fail to illuminate the subject.

Social Medicine, Medical Economics and Miscellany

EPIDEMIC INFLUENZA IN THE MEDICAL AND SURGICAL HISTORY OF THE CIVIL WAR

LOY MC AFEE, M.D.

Contract Surgeon, U. S. Army; Secretary, Board of Publications, and Assistant, Division of Medical and Surgical History, Surgeon-General's Office

WASHINGTON, D. C.

As part of the work in the Office of the Surgeon-General, preliminary to collecting data for the forthcoming medical and surgical history of American participation in the European war, a digest was made of the preliminary volume ("Circular No. 6") of the "Medical and Surgical History of the War of the Rebellion," and of the six large volumes (three medical and three surgical) that constitute the history proper. The object was to make this material available in simple outline to those persons delegated by the Surgeon-General to formulate the forthcoming history. This would facilitate comparison and quick reference regarding the general plan and scope of the earlier work, the epidemics encountered, and the various other questions that might arise in this connection.

Among other aspects of this research was the one involving a study of the epidemic diseases encountered during the Civil War as compared with those that have characterized the present conflict. Quite naturally, in view of the recent pandemic, influenza received special attention in this regard.

HISTORY OF INFLUENZA

In his "History of Epidemics in Britain" (two volumes, 1894), Creighton gives the history of influenza, a disease which, under various names, can be identified clearly enough in certain instances, even in the earliest times.

As early as the year 1554, we are told, the Venetian ambassador in London called the sweating sickness of 1551 an influenza. This is the Italian form of the Latin "influxio," meaning catarrh. Creighton thinks the term was the outgrowth of the old humoral pathology.

In 1712 the "new ague" appeared, to which the French applied the name "la grippe," the Germans "Galanterie-Krankheit" and "Mode-Krankheit," all meaning "the disease *à la mode*," the first figuratively.

In 1743 the Italian word "influenza" first appeared in England, when the rumor of a great epidemic at Rome and elsewhere in Italy, called by this name, reached England a month or two before the disease itself.

This epidemic was of short duration, and with its passing the Italian name, likewise, was generally forgotten until 1762, when some one suggested that the disease then epidemic was "the disease called influenza" twenty years before. Another epidemic, in 1782, served to bring the name into general use. After the great epidemics of 1833 and 1847, more than a generation passed with little disturbance from this source. Then came the great pandemic which began in Russia in 1889 and spread from country to country, with recrudescences, lasting until 1894.

In our own country it seems that influenza has appeared in sporadic, epidemic and pandemic form. The first epidemic described, which swept the country and extended to the West Indies, was that of 1647, recorded by Noah Webster. In 1655 there was a second. Others, in 1789 and 1807, were described by Benjamin Rush and Daniel Drake, respectively.

In this country, as elsewhere, the disease has appeared under different names, and, as in England, the term "influenza" became both "popular and vague."

It is not surprising, therefore, to find, in the "Medical and Surgical History of the War of the Rebellion," a confusion of the terms "acute catarrh," "acute bronchitis," and "epidemic influenza," as applied to affections presenting the general symptomatology, with the same variations in detail, as have been noted in the present pandemic.

RELATIONSHIP BETWEEN INFLUENZA AND EPIDEMIC CEREBROSPINAL MENINGITIS

It is interesting, in this connection, to learn that observers during the Civil War noted an apparent relationship between what was then called "spotted fever" (epidemic cerebrospinal meningitis) and epidemic influenza.

The American Medical Association appointed a "committee on 'spotted fever, so-called,'" an epidemic of which was then (1863) in progress in Philadelphia and vicinity. The report of this committee appeared in the Transactions of the Association in 1866.

We find (p. 337) that "when the attention of the profession in Philadelphia was called to the existence of spotted fever, there was prevailing in that city a severe and widespread epidemic of *influenza*, or epidemic catarrhal fever. . . . Several medical men in active practice were at once struck with the resemblance of many of the symptoms of the two diseases, and were led to inquire if influenza might not be but a milder manifestation of that epidemic influence which in its intensity produced spotted fever. Nor, it will seem, were their symptoms very dissimilar save in degree. Suddenness of attack, intense pain in the head and back, great nervous depression associated with marked hyperesthesia, great precordial distress, nausea and vomiting were common to the two diseases. So, too, were certain incidental phenomena, such as the occurrence of irregular forms of cutaneous eruptions, roseola and urticaria, occasional glandular swellings and rheumatoid affections of the joints." Some acknowledged and some ridiculed the idea of the resemblance. Some regarded influenza and spotted fever as "two diseases as in no way differing but in degree and seat of their urgent symptoms." One contemporary writer called spotted fever "malignant influenza." This writer, Dr. North, proposed the following classification: When the disease exists with simple inflammation of the air passages, i. e., ordinary influenza, "febris catarrhalis"; when with pleurisy or pneumonia, "febris catarrhalis synocha major"; when in severest form, "febris catarrhalis maxima, or spotted fever."

Canstatt, in "Die Specielle Pathologie und Therapie," considered spotted fever as "epidemic catarrh complicated with putrid or adynamic fever."

It will be interesting in this connection to note the results of studies, now being made, of the brains and spinal cords of patients who have succumbed to influenzal pneumonia during the recent epidemic.

INFLUENZA DURING THE CIVIL WAR

In the third medical volume of the "Medical and Surgical History of the War of the Rebellion" (p. 725 *et seq.*), the following statements appear with reference to epidemic catarrh:

"During the fourteen months, May, 1861, to June, 1862, inclusive, 85,677 cases of 'catarrh,' six of which terminated fatally, were reported among the white troops. No particulars of these cases have been recorded." The term "acute bronchitis" was substituted for "catarrh" on the monthly reports of sick and wounded. Among the white troops 134,397 cases were reported, and among the colored troops, 9,869. Throughout the several years covered by the statistics, the average annual rate was 61.4 per thousand strength among the white and 53.8 among colored troops. The quartering of the troops in unaccustomed circumstances as to climate and general surroundings, the crowding, the fatigue, etc., were thought to exert an influence in the causation of the epidemics. "Its raw material, under the exposures of the bivouac, became affected with catarrh associated with great disturbance of the system and unusual prostration, which was due rather to the unaccustomed fatigues and privations undergone by the men than to any epidemic influence."

The surgeon of the Twentieth Indiana, located in Maryland, reported that soon after camping at Fortress Monroe (September, 1861), an epidemic of influenza appeared in his regiment. The cough was violent and persistent, but the constitutional disturbance, according to the surgeon, was slight. This epidemic was preceded by another that affected a neighboring camp. In the latter epidemic, which was described by the surgeon in charge in the *Medical and Surgical Reporter*, Philadelphia (7:189, 1861-1862), the respiratory passages, as a rule, were not severely affected, although in some cases uneasiness in the chest, and the expectoration of blood, were noted. The disease was marked by a severe and almost invariable pain in the frontal region, which sometimes extended over the whole head, by pains in the loins, aching in the lower extremities, and pain in the neck and arms. Intestinal disorder also was prominent, evinced by severe diarrhea, with frequent watery, bloody and mixed stools, tenesmus and tenderness of the abdomen. There was great debility, but there was not great febrile disturbance. The epidemic lasted more than two weeks.

Another surgeon, from a neighboring camp, reported an epidemic at about the same time, nearly every man in the regiment being more or less affected by it. In this instance, unlike the one just mentioned, the disease was characterized by severe aching, throbbing pains in the head, back and limbs, bronchial inflammation and hepatic disorder. In all cases, in its severest phases, it was followed by unusual physical debility and tedious convalescence.

"Acute bronchitis," the term later applied to "epidemic catarrh," was held responsible for 168,715 cases of sickness, among the white troops, with 650 fatalities—an average annual rate of 76.8 cases and 0.27 deaths per thousand. Among the colored troops there were 22,648 cases, and 255 deaths, giving an average annual rate of 123.5 cases and 1.33 deaths, and a mortality rate of 1.12 per cent. of the cases.

The association of pneumonia with influenza, in these epidemics, though not unknown, was evidently not so frequent an occurrence as to render the mortality very striking.

We find (p. 783) that the records contain 135 cases of lobular pneumonia secondary to acute bronchitis or other morbid processes in the lungs in men whose vitality was reduced by previous attacks of disease.

The Feebleminded and Prostitution

In the *Social Hygiene Monthly* for October, Katherine Ostrander discusses the menace of the feebleminded prostitute. Figures are given of the results of the working of the laws and regulations in Michigan. Six hundred and seventy-five women patients were admitted for venereal treatment throughout the state. Of these, 391 were discharged as being no longer in an infectious state, leaving 284 women under treatment. Of the 391 women, 385 were acknowledged or unacknowledged prostitutes. Of the discharged women, twenty were recommended for care in the Michigan Home and Training School at Lapeer, but could not be taken because of lack of room. Sixty of the women were found to be retarded mentally, but not to a degree making institutional care necessary. They are high grade morons, physically attractive, and appear normal, but are incapable of deciding for themselves right and wrong and are a constant menace. Of the 391 discharged, seven, or 2 per cent., were returned to the hospitals reinfected. All but one of these were feebleminded. The figures given of the disposition of the discharged women shows the great difficulty of making any permanent progress in the spread of venereal diseases through the handling of these women without permanent segregation and custodial care. In psychopathic clinics established in Detroit and some other cities of the state, out of 247 women examined, forty-five were pronounced totally feebleminded and unable to adapt themselves to society, and though twenty of them were diagnosed as imbeciles, they could not be institutionalized through lack of room in the institutions of the state, and will return again to their old haunts. Feebleminded and psychopaths not of a degree to demand institutional care amounted to 35 per cent. of the whole, and 35 per cent. of these, it is said, have little hope of complete reformation without constant personal supervision. Ostrander says that the most difficult of all social problems is the high grade feebleminded person, who looks normal, but is restless, lacks power of decision, has no will, no tenacity or power of concentration and will always be carried by any will stronger than her own.

Medicolegal

Expert Testimony as to Value of Services

(Terrill v. Fotheringham (Wash.), 173 Pac. R. 748)

The Supreme Court of Washington, in affirming the judgment rendered in favor of the plaintiff, a physician, does not state the amount he sued for, nor the amount for which the judgment was rendered, but says that he sued the executor of the estate of a former patient on account of services rendered to such patient in his last illness, which account consisted, not of unit prices, but an aggregate sum, and, not being satisfied with the amount the trial court allowed him, he appealed. The patient was a resident of Seattle who went to San Francisco, where he received the professional services of the plaintiff. The trial was without a jury and there was no dispute as to the facts or findings, except as to the value of the services.

The plaintiff applied for a commission to take the depositions of five physicians in San Francisco as to the value of the services. The court refused except for three, other than the plaintiff, and this was assigned as error. It is apparent that this was a matter within the discretion of the trial court with reference to something that was neither exact nor scientific. It possessed no element of knowledge, but consisted of pure opinion. Such expert evidence, even if uncontradicted, is not conclusive, but merely advisory—only a guide.

In this connection, it may be noticed that, as against these three, there were two witnesses for the defendant. Two physicians of Seattle testified for the defendant, and this was charged as error, on the theory that a physician residing elsewhere than in San Francisco was not qualified to testify, since the services were rendered there. Whatever may be the general rule in this regard was not controlling here, for an understanding of the nature and kind of disease, known of by all physicians, in respect to the care and attention it exacts from the attending physician, could with ease be, and was, testified to by these two physicians, thus being of help to the court in weighing and appropriating the advisory testimony of all as to the value of the services, the ultimate concern of the court. If, in testifying, they, who must have some general idea of such values, do express themselves as to the amount, how shall it be well claimed as error? For at most it would in this respect be only immaterial, a quality which in cases tried to the court will find no reflection in the judgment reached. There was no mistake of law by the court in the trial.

Hospital Not Liable for Medical Superintendent's Breach of Contract

(Davin v. Kansas Medical, Missionary & Benevolent Association (Kan.), 172 Pac. R. 1002)

The Supreme Court of Kansas holds that a charitable hospital corporation is not liable in damages for the failure of its medical superintendent to comply with a contract made by him for the care of a patient being treated in the hospital. The court says that the defendant was a charitable corporation organized under the laws of Kansas for purely philanthropic purposes, and conducted a hospital, or sanatorium. The plaintiff was afflicted with melancholia and was, by her husband, taken to the defendant's hospital. He stayed with her a couple of days, when he was advised by the defendant's medical superintendent to go home and stay away from the plaintiff. He agreed to do so on condition that a nurse be placed in charge of the plaintiff at all times, and that she be not left alone. To this the medical superintendent assented. A special nurse was placed in charge of the plaintiff, but the nurse did not remain in the room with the plaintiff at all times. The nurse slept in the hall near the door to the plaintiff's room. While the nurse was so sleeping, the plaintiff got out of her bed, passed through an open window, and fell to the roof of a porch below and injured herself. She brought this action to recover damages for the injuries sustained by her. There was no allegation in the petition, and there was no evidence to prove that the defendant did not exercise reasonable care in the employment of its physicians and attendants. The jury returned a verdict in favor of the plaintiff, and answered special questions to the effect that no one received profits or dividends from the earnings of the defendant; that the negligence of which the defendant was found guilty was in not complying with the special contract entered into with Mr. Davin in supplying a special nurse in constant attendance on Mrs. Davin at all times; that the special nurse placed in charge of Mrs. Davin was the servant or agent of the defendant guilty of the negligence found; that the medical superintendent and the special nurse had reason to believe that the plaintiff would be likely to injure herself; that the medical superintendent had been informed by a physician of the nature of the case. But the court holds that the plaintiff could not recover under the facts found by the jury, and affirms a judgment rendered for the defendant notwithstanding the verdict, which was set aside. The medical superintendent made the agreement, and he might be liable personally; but the plaintiff argued that because he failed to comply with his agreement the defendant was liable. But there was no reason why the defendant should be liable for the medical superintendent's negligence, any more than it should be liable for the negligence of the nurse who was looking after the plaintiff. Under *Nicholson* v. *Hospital Association*, 97 Kan. 480, 155 Pac. 920, wherein the court said that charitable associations conducting hospitals are not liable for the negligence of their physicians and attendants resulting in injury to patients unless it is shown that the association maintaining the hospital has not exercised reasonable care in the employment of its physicians and attendants, the defendant was not liable for the negligence of its medical superintendent.

Liability for Negligence in Case of Scarlet Fever

(Tadlock v. Lloyd (Colo.), 173 Pac. R. 200)

The Supreme Court of Colorado affirms a judgment for $400 damages in favor of the plaintiff for the alleged negligence of the defendant, a physician, in failing to give proper attention to the plaintiff's child, aged 5 years, resulting in the boy's death. The court says that evidence was produced to the effect that the defendant called as requested the first time, and diagnosed the disease as scarlet fever; that no instructions were given as to the care of the child, except that some pills were left with the mother to administer, with directions to bathe the child frequently, that the next day the defendant was requested to call and see the child again, but did not do so, saying that the disease must run its course; that on the day after that he was called on to visit the child in the morning, in the afternoon and in the evening, and on each occasion declined to make the visit, but later, after urgent request, went to the house, the child dying shortly after his arrival. From the testimony of a lay witness the child strangled to death from an accumulation of phlegm in its throat. A nonprofessional witness also testified that the defendant said, as he was attempting to remove the obstruction from the throat of the child, "It's too late; I ought to have come when you called me." On the other hand, the defendant introduced testimony contradicting specifically and in detail every material matter relied on by the plaintiff for a recovery of damages, thus making issues of fact the determination of which by the jury should not be disturbed by this court.

It was urged that even though the negligence of the defendant was established, there was nothing in the record to show that the death of the child was the proximate result of such negligence. But that the negligence alleged was the proximate cause of death was a question, under proper instructions, for the jury. The jury determined that the proximate cause of the death of the child was the negligence of the defendant; and, there being testimony tending to support that conclusion, this court should not interfere with the finding of the jury. It must be remembered that this case was not founded on active malpractice, but on the negligent failure to give proper care and attention to diagnosis and treatment of the patient. The plaintiff predicated his action

on the theory that the defendant failed to inform himself and give proper attention to the case. There was no claim that the defendant did not possess skill, knowledge and experience in his profession, or that he made error in diagnosing the ailment. It was in no sense an error of judgment, but an absolute failure to attend on the patient and secure data on which to base any judgment, that constituted the ground of the complaint. There was abundant testimony that the defendant made no effort to inform himself of the condition of his patient, or the progress of the malady, and if damage resulted therefrom he was liable. In considering the amount of testimony to show that the death of the child was the proximate result of the alleged negligence, there must be taken into consideration the difficulty, if not the actual impossibility, of conclusively demonstrating the cause of death. The code of ethics among physicians is frequently a bar to securing positive testimony on questions such as were here involved.

An instruction was given that the fact that a physician was shown to have skill in his profession raised no presumption that he exercised such skill in a given case. This, if applicable, would probably have constituted error, for all persons are presumed to have properly performed the duties that are imposed on them by law, and this instruction deprived the defendant of such presumption. But it was to be noted that this action was founded solely on the fact that the defendant failed and neglected to attend on his patient, although urgently and repeatedly requested to do so. The case involved no question of skill or the exercise of skill by the defendant. The instruction had no application to the case, and the giving of it did not constitute prejudicial error.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

January, 1919, **9**, No. 1

Working Program Against Influenza. Editorial Committee of American Public Health Association.—p. 1.
*Teamplay in Public Health. G. E. Vincent.—p. 14.
Work of Illinois Influenza Commission. R. A. O'Neil, St. Clair Drake and J. O. Cobb.—p. 21.
*Distribution of Influenza by Direct Contact—Hands and Eating Utensils. C. Lynch and J. G. Cumming.—p. 25.
Organization of Federal, State and Local Health Forces. A. J. McLaughlin,—p. 38.
Ultimate Benefits to be Derived from Influenza Epidemic. L. I. Harris.—p. 41.
What We Really Know About Influenza Epidemic. M. Nicoll, Jr. —p. 43.
*Etiology of 1918 Pandemic of Influenza. W. H. Park and A. W. Williams.—p. 45.
Influenza Epidemic As Shown in Weekly Health Index. W. H. Davis. —p. 50.
Public Schools of Chicago During Influenza Epidemic, 1918. H. O. Jones.—p. 62.

Teamplay in Public Health.—Abstracted in THE JOURNAL, Jan. 4, 1919, p. 67.

Studies of Influenza Epidemic.—The papers by Drs. Lynch and Cumming and Drs. Park and Williams were abstracted in THE JOURNAL, Dec. 18, 1918, pp. 2174 and 2175.

Archives of Internal Medicine, Chicago

Jan. 15, 1919, **23**, No. 1

*Occurrence of Inverted and Diphasic P-Waves in Lead III of Human Electrocardiogram. E. P. Carter and A. M. Wedd.—p. 1.
*Epidemic Cerebrospinal Meningitis at General Hospital No. 6, Fort McPherson, Ga., Winter of 1917 and 1918. C. N. B. Camac and K. M. Bowman.—p. 17.
Essential Nature of Antitryptic Activity of Normal Serum and Physiologic Function of Pancreatic Ferments. H. Wago.—p. 33.
Chronic Capillary Cyanosis. L. Langstroth.—p. 56.
*Goiter Among Draft Men from Northwest. E. P. Brendel and H. M. Helm.—p. 61.
*Nonspecific Therapy in Arthritis and Infections. D. M. Cowie and H. Calhoun.—p. 69.

Inverted and Diphasic P-Waves in Electrocardiogram.—According to Carter and Wedd the administration of digitalis may lead to an alteration in the negativity of the P-wave in Lead III of the human electrocardiogram. Three instances of the presence of a persistently inverted P-wave, in Lead III, uninfluenced by vagus pressure, atropin, digitalis or deep breathing are recorded. Excepting in the presence of a permanently negative P_3, the electrical negativity of the inverted P-waves in Lead III is reversed by atropin. Additional evidence is cited showing the effect of the vagi on a change in the location of the pacemaker in Lead III.

Epidemic Cerebrospinal Meningitis at Fort McPherson.—Ten cases of epidemic cerebrospinal meningitis were treated by Camac and Bowman, with two deaths. Kernig's sign was present in five cases, opisthotonos in three cases, orthotonos in two cases, delirium in six cases, headache in eight cases, and fever in eight cases (in four of these cases the temperature was 104 F. or more). The pulse was slow in comparison to the temperature, only one case showing the pulse above 103. Respirations were slightly increased. Vomiting was present in six cases. Lumbar puncture showed a cloudy fluid in seven cases; in three cases it was clear. A chill occurred in three cases. During the course of the disease the following findings were recorded: Serum sickness occurred in every patient treated except two, and one of these lived only four hours after his first treatment. The other patient was a negro, and he developed pain in ankles and testicles; there was no rash. Of the six cases in which opisthotonos was absent at the onset, it developed later in two. Orthotonos was a common feature. Of the five cases in which the Kernig sign was absent at the onset, it developed in two. Herpes labialis occurred in three cases. Purpura and rash, except that from serum sickness, was absent in all cases. The "spotted" rash described as one of the features of this disease did not occur in any of the cases. Three patients required catheterizing. All patients had a febrile temperature curve.

Goiter Among Draft Men From Northwest.—Among 8,951 men coming from certain of the northwestern states, notably Oregon and Montana, there were thirty-seven cases of goiter. The authors regard this as being a high percentage.

Nonspecific Therapy in Arthritis and Infections.—Following the injection of a foreign protein (typhoid vaccine) there is a sudden disappearance of the polymorphonuclear cells of the blood, which are soon replaced by an increase amounting in most cases to a hyperleukocytosis. The polynuclears are young and the presence of myelocytes and of nucleated reds points to renewed activity of the respective mesenchymal tissues. The foreign protein seems to have stimulated all the mesenchymal tissues simultaneously. The order in which they are usually called on in infectious processes is, first, the neutrophil leukocytes without immature forms; second, metamyelocytes; third, myelocytes; fourth, promyelocytes; and fifth, megaloblasts. Cowie and Calhoun are inclined to the opinion that during the leukopenia stage the polynuclears leave the blood stream and enter the tissues, and that the subsequent increase in cells is due to an overproduction of cells from the respective mesenchymal fundaments, as is witnessed by the presence of myelocytes and nucleated reds. This view is further substantiated by the clinical findings of increased joint heat and swelling. The temperature reaction and the clinical findings are not in the nature of an anaphylactic response, as is shown by the absence of an eosinophilia. The cyanosis observed is not due to methemoglobin. Improvement is most marked following those reactions in which there is a good myelocytic response. This is probably a measure of the capacity of the body to react. The marked similarity between the typhoid protein paroxysm and the malarial paroxysm causes Cowie anl Calhoun to believe further that their production is due to a common etiologic factor—dead protein. The death of the malarial parasite sets free in the blood stream a sufficient amount of malarial protein to produce the typical protein reaction. The malarial paroxysm, therefore, is not due to

the presence of the new organisms, as has been suggested, but to the death of the old ones.

Boston Medical and Surgical Journal

Jan. 23, 1919, **180**, No. 4

Institutional Dentistry (Insane) Report No. 4. F. A. Keyes.—p. 89.
Neck Injuries. H. W. Marshall.—p. 93.
Epidemic of Influenza. S. W. Myers.—p. 98.

California State Journal of Medicine, San Francisco

January, 1919, **17**, No. 1

Treatment and Laboratory Control of Diabetes. I. Langstroth.—p. 5.
*Karell Cure for Heart Disease Revived. N. B. Potter.—p. 11.
Pitfalls in Diagnosis and Treatment of Senile Hypertrophy of Prostate. W. B. Dakin.—p. 18.
*Abdominal Cesarean Section: Indications and Technic. L. G. McNeile.—p. 20.
Drugs in Their Local Application to Ear, Nose and Throat Treatment. H. Y. McNaught.—p. 25.

Karell Cure for Heart Disease.—The modifications of this cure which Potter has employed are one or more of the following: (1) full milk (unskimmed); (2) strengthening full milk still further by adding cream but without increasing the bulk; (3) by adding lactose in gradually increasing amounts; (4) adding unsalted and very thoroughly cooked oatmeal in gradually increasing amounts, either to the milk itself as a gruel, or as a cereal on which the milk with or without lactose is poured. Numerous other modifications of this diet and many radically different diets, tried out in cases of cardiac insufficiency, have failed to produce the benefit almost invariably a result of the original and simplest form, namely, four times 200 c.c. of skimmed milk.

Potter is convinced that in many cases quite as prompt and efficient diuresis, loss of weight, disappearance of edema, and marvelous subjective improvement can be obtained with such modifications in the diet as suggested by him as in following the strict Karell cure. These modifications, if carefully adjusted to the individual taste, digestion and condition, do not disturb but rather aid the digestion. They also enable the physician to carry out, even in private practice, an excellent diet for the purpose in hand without arousing too great opposition. They permit a slower and more agreeable transition to a normal diet, as well as an opportunity to continue such a diet a longer period or practically to renew it from time to time, and that, too, more or less indefinitely whenever an increase of weight or of edema or a recurrence of dyspnea warns the physician of its expediency. Potter believes that this diet plus the rest entailed accords a valuable introduction to any reduction cure. One essential feature (if not the most important) is the almost invariably resulting decrease in the work of the heart.

Abdominal Cesarean Section.—McNeill has done forty-five consecutive cesarean sections, losing two mothers—one from acute dilatation of the stomach and one from general peritonitis—and four babies; three stillborn and one, a premature baby, died in three days as a result of the neglect of the attendant.

Florida Medical Association Journal, St. Augustine

December, 1918, **5**, No. 6

Relation of Trained Nurse to School and Community Work. R. R. Kime.—p. 97.
Colitis. R. E. Wilhoyte.—p. 99.
Secretin and Change in Corpuscle Content of Blood During Digestion. A. W. Downs and N. B. Eddy.—p. 101.

Illinois Medical Journal, Chicago

November, 1918, **34**, No. 5

Diagnosis of Pulmonary Tuberculosis in Army. R. S. Berghoff.—p. 241.
Further Objections to Compulsory Health Insurance. E. H. Ochsner.—p. 244.
Army Medical Corps. E. J. Doering.—p. 250.
Diagnostic Signs of Tuberculosis of Bronchial Glands. W. B. Metcalf.—p. 252.
Cancer of Rectum (Operated on Through a Vaginal Incision). C. J. Drueck.—p. 255.
Value of Accurate Localization of Foreign Bodies in Eye. J. R. Hoffman.—p. 260.
Prostatectomy. F. Stewart.—p. 263.
Stillbirth Due to Infection. E. L. Cornell.—p. 266.
Treatment of Otosclerosis from Etiological Pathological Standpoint. H. L. Pollock.—p. 268.
Pathogenesis of Ophthalmia Eczematosa. M. Goldenburg.—p. 272.
Incipient Squint. E. J. Gardiner.—p. 277.

December, 1918, **34**, No. 6

Gall-Stone Disease Complicating Pregnancy. A. P. Heineck.—p. 297.
Induced Pneumothorax in Pulmonary Tuberculosis. Report of 202 Cases. E. Morris.—p. 306.
Diplococcus Pneumonia. F. J. Norton.—p. 312.
Epidemiology and Prophylaxis of Lobar Pneumonia. W. Baumgarten.—p. 314.
Study of Lobar Pneumonia. E. E. Simpson.—p. 316.
Trench or War Nephritis. (Is It a Clinical Entity?) M. Mandel.—p. 322.
Proper Diagnosis as Guide to Prognosis and Operative Treatment of Impaired Hearing. R. Sonnenschein.—p. 324.
Sarcoma of Testicle. Report of Two Cases. J. J. Gill.—p. 326.
Indications in Kidney Surgery. G. Kolischer.—p. 327.
Interpretation of Symptoms in Functional Nervous Disorders. I. B. Diamond.—p. 331.
Psychiatry of Dementia Praecox. H. C. Stevens.—p. 335.

Journal of Cutaneous Diseases, New York

January, 1919, **37**, No. 1

*Association of Certain Cutaneous Lesions with Diseases of Hemopoietic System. D. Symmers.—p. 1.
*Unusual Forms of Superficial Epitheliomas of Skin. L. W. Ketron.—p. 22.
*Elephantiasis Vulvae. A. Ravogli.—p. 38.
*Syphilis of Tongue. G. D. Culver.—p. 484.

Symptomatic Relationship Between Skin Lesions and Blood System.—Symmers claims that instances of generalized exfoliative erythrodermia occur sufficiently frequently in association with such diseases of the lymph nodes as Cohnheim's pseudoleukemia, lymphatic leukosarcomatosis, Hodgkin's disease, mycosis fungoides and disseminated tuberculous lymphadenitis, as to indicate a symptomatic relationship. Symmers suggests that, in these circumstances, toxic substances formed in the lymph nodes are offered to the skin for excretion, interfering with its nutrition in such fashion as to promote widespread desquamation of the superficial epithelium. There are apparently excellent reasons for the belief that mycosis fungoides is primarily a disease of the hemopoietic system, more particularly the lymph nodes, in the course of which diversified skin changes arise, partly as phenomena secondary to the discharge of lymphotoxins or myelotoxins, or both, and partly as a result of infiltration of the skin by the same variety of cells as characterize the structure of the diseased lymph nodes themselves. A case is cited by Symmers in support of his contention that the clinical and pathologic changes in the so-called lymphodermia perniciosa of Kaposi are essentially the same as those of Sternberg's lymphatic leukosarcoma, both belonging in the category with cases of mycosis fungoides in which leukemic transformation occurs. And, Symmers says, the greater number of all cases of so-called sarcoid growths, as grouped and classified by Darier, are almost certainly nodular cutaneous tuberculomas. Therefore the term sarcoid should be eliminated from dermatologic literature as meaningless and confusing.

Unusual Forms of Superficial Epitheliomas.—Three cases of basal-cell epithelioma of the skin are reported by Ketron because of their unusual clinical appearances. One was a case of multiple epitheliomas of the back. The lesions presented the dark-red color characteristic of syphilis. One was a depressel, oval, scarlike epithelioma on the right cheek. The third was a large circular epithelioma situated just above the left breast. The lesion had a hard nodule in the center. These basal-cell epitheliomas occur as flat patches on the skin, spreading superficially, with little tendency to invade the deep layers of the corium. These patches lack the tumor formation and progressive ulceration characteristic of the usual forms of cancer. The only clinical sign which the lesions may show characteristic of the common forms of skin cancer is a raised, pearly border. This is, however, frequently absent and the diagnosis may be impossible without a histologic examination. Ketron calls attention to the

fact that these superficial cancers are apparently insufficiently emphasized in textbooks.

Elephantiasis Vulvae.—Elephantiasis is described by Ravogli as consisting of a chronic hyperplasia of the connective tissues of the skin and of the subcutaneous tissues from a lymph stasis. The passive congestion causes the effusion of serum from the blood and lymph vessels together with white cells, which, infiltrating the tissue elements, produce hyperplasia and consequently disproportion of the parts. The same process affecting the papillary layer of the derma causes the proliferation of the papillae in the form of small warts on the elephantiasic surface. That syphilis is the most obvious factor in the production of elephantiasis cannot be doubted, although Wassermann tests, in some cases, have been slightly positive, and in others negative. Local applications have been of no benefit. The elephantiasic organs have to be removed. Ravogli has obtained fairly good results in all his cases; the patients have been seen again after two or three years, and relapses did not occur.

Syphilis of Tongue.—Among 530 instances of syphilis seen by Culver the tongue was involved in twenty-seven (5.09 per cent). There were sixty-two cases with mouth involvement, not including instances of syphilitic angina. Therefore the tongue was affected in nearly one half of the mouth cases, and in the greater proportion of the lingual cases the disease was limited to the tongue. There was one instance of lingual chancre, nine instances with mucous patches, eight with gumma, nine with chronic specific glossitis, including leukoplakia, four having leukoplakia associated with other phases of chronic specific glossitis. In the nine cases which were treated by Culver the duration of the condition was from one to nine years, an average of four. Three patients gave negative Wassermann reactions of the blood serum, four were positive, and in two the reaction was not determined. In all the nine cases there was an absence of epitheliomatous degeneration, whereas in eight instances of gumma of the tongue, with an average duration of two and one half months, there was an instance of complication with epithelioma. The most important conclusion reached by Culver is that with a doubtful tongue lesion it is not only a justifiable procedure, but it is urgently advised to administer arsphenamin.

Journal of Parasitology, Urbana

December, 1918, **5**, No. 2

Sarcocystis Tenella Railliet: II Seasonal Infection. J. W. Scott. —p. 45.
*Effect of Laundering on Lice (Pediculus Corporis) and Their Eggs. W. Moore.—p. 61.
Anatomy of Tetracotyle Iturbei Faust; Synopsis of Described Tetracotyliform Larvae. E. C. Faust.—p. 69.
Parasites of Venezuela. Study of a Distoma. J. M. R. Sierra.—p. 80.
Flies of Genus Drosophila As Possible Disease Carriers. A. H. Sturtevant.—p. 84.
New Cercariaeum from North America, Found in Fish. W. W. Cort. —p. 86.

Effect of Laundering on Lice.—The object of Moore's investigation was to determine to what extent laundering was destructive to both lice and eggs, and should it prove to be inefficient, what slight alterations could be made in the regular routine to make laundering effective. These experiments showed that the lethal temperature for lice is about 113 F. (45 C.) for twenty-two to thirty minutes washings, and a slightly higher temperature, 114.5 F. (45.8 C.) proved effective in fifteen minutes' time. The following procedure is recommended for the laundering of woolen goods to destroy both lice and eggs: Infested garments to be washed at a temperature of 120 F. (48.8 C.), not to fall below 115 F. (46.1 C.) during the washing period of fifteen minutes, this treatment to destroy the active stages without the use of any special chemicals. Garments are then treated in the regular manner until perfectly dry, when they should be placed in the hot air tumbler at a temperature of 150 to 170 F. (65.5 C. to 76.6 C.) for ten to fifteen minutes, resulting in the destruction of the eggs. By this method it will be possible to launder woolens without shrinkage, and destroy the lice and eggs without the use of a special chemical.

Kansas Medical Society Journal, Topeka

January, 1919, **19**, No. 1

Is War or Weather Responsible for Recent Prevalence of Pregnancy Toxemias? Results of Standardized Treatment of Forty-Four Cases. G. C. Mosher.—p. 1.
Hyaloid Reflexes and Their Clinical Significance. E. J. Curran.—p. 15.

Medical Record, New York

Jan. 25, 1919, **95**, No. 4

Two Hundred and Fifty Major Operations Under Local Anesthesia. J. Wiener.—p. 135.
Future Policy in Dealing with Disabled Civilians; Some Conclusions from Experience. D. C. McMurtrie.—p. 142.
Typhoid Vaccine as a Therapeutic Agent. W. W. Cadbury.—p. 144.
Military Organization and Treatment of Tuberculous Soldier. O. Paget.—p. 148.
Groping in Medicine. B. Robinson.—p. 149.

New York Medical Journal

Jan. 25, 1919, **109**, No. 4

Development of Colon Surgery. E. R. McGuire.—p. 133.
*Influenza at Army General Hospital No. 17, Markleton, Pa. P. A. Loomis and J. Walsh.—p. 135.
Flat Feet and Weak Feet. H. Scheimberg.—p. 138.
Secondary Sutures in Wounds. A. L. P. Piollet.—p. 142.
Endoscopic Treatment of Laryngeal Stenosis. H. L. Lynah.—p. 146.
Empyema, Abscess and Gangrene of Lung Following Epidemic Influenza. M. Behrend.—p. 150.
Perodactylism, Syndactylism, and Cleft Extremities in a Child. J. Epstein.—p. 153.
Case of Mental Imbecility with Absence of Sella Turcica: Improvement By Organotherapy. J. H. Leiner.—p. 156.

Influenza at U. S. Army General Hospital No. 17.—This epidemic was unique in that the original case from which all others developed was definitely known. A passing troop train consigned the patient to the care of Loomis and Walsh. The case was an extremely malignant case of influenza. The patient died. The necropsy showed bronchopneumonia of both lower lobes, the left being completely involved and the right to the extent of about 50 per cent. This patient had been carefully isolated. No one was allowed on the floor except the physicians, nurse and on the last day an attending corps man. The chief of the laboratory who saw him once to examine his blood manifested the disease the next evening. The medical chief who visited him was taken ill on the fourth day. The surgical chief saw the case only at necropsy, but came in contact with the chief of the laboratory all that day and the disease had fully developed on the next day. The nurse who attended the first patient showed definite symptoms on the fourth day. All four of these cases showed the typical signs of influenza and later bronchopneumonia, the chief of the laboratory dying and the other three patients passing through severe sieges and recovering. The disease spread to nurses and attendants, and it also developed in eighteen enlisted men and three tuberculous patients. Of these thirty-one patients, pneumonia developed in eight. All but one of these eight had been in direct contact with the original patient or with the chief of the laboratory, both of whom died. All physicians, nurses and enlisted men who came in contact with patients wore masks and gowns, and were carefully instructed in regard to precautions, though evidently without avail. Doctors, nurses and attendants helped to feed the flames and fill the wards until an immune staff was found. It is interesting to observe that out of 200 tuberculous patients the disease developed in only three while twenty-eight cases occurred among the personnel of 100.

New York State Journal of Medicine

January, 1919, **19**, No. 1

*Etiology of Nephritis. C. J. Hunt.—p. 4.
Diagnosis of Nephritis. A. A. Epstein.—p. 8.
Treatment of Chronic Nephritis. J. R. Williams.—p. 12.
Backache from Medical Viewpoint. M. S. Woodbury.—p. 18.
*Syphilis As Cause of Backache. P. W. Roberts.—p. 20.

Etiology of Nephritis.—Only such cases were studied by Hunt in which there were well defined evidences of focal infections and of renal involvement which suggested diffuse hematogenous inflammatory lesions or nephritis with fibrosis.

The influence of metallic or other toxins, except chronic foci, has been excluded in every way possible and the alteration of functional power before and after the correction of discoverable foci has been used as a criterion for diagnosis and as indicating chronic foci as the most important etiologic factor. In order to standardize each case immediately after the history and physical examination had been made, the patient was placed on a nephritic test diet, containing approximately 13.4 grams nitrogen, 8.5 grams sodium chlorid and 1,800 cubic centimeters of fluid during each twenty-four-hour period. Patients were not permitted to have eliminating baths, cathartics or enemata during days of observation. The meals were served in the room by a specially selected waitress and all foods and fluid not ingested were returned to the diet kitchen for remeasurement. By this means a more careful check was made of endogenous nitrogen and sodium chlorid. A specific gravity fixation test, a phenolsulphonaphthalein test, total nonprotein nitrogen determinations of the blood and of the urine were made. Ammonia nitrogen and chlorids from the urine and blood plasma chlorids were determined. Plasma acidity and blood sugar determinations were also made. The full details of all these tests and analyses are given in the original article, which should be consulted.

Of 342 cases of nephritis presented, sixty were studied by the methods noted. Of the sixty, forty-seven submitted to corrective measures as advised and were subsequently restudied. The longest period of observation was two years and the shortest twenty-six days following corrective measures. Of the forty-seven patients submitting to correction measures, nine have not been noted, six report little or no change, and thirty are "much improved" or "apparently as good as ever." Hunt says that the latter quotation appeared frequently enough to be used as a general statement. Culture s udies showed a *Streptococcus mucosus* as the principal pathogen. Other bacterial forms, in order of frequency, were a diphtheroid, *B. mitis, S. candidus, S. viridans* and pneumococcus (not typed).

Inherited Syphilis as Cause of Backache.—The five cases of back pain observed by Roberts in this study fall under the general classification of myositis. Their symptomatology suggests irritation of muscle and fibrous tissue by some toxic material, and the degree of discomfort ranges from dull lumbar backache to acute pain on any attempt at motion. Except for tenderness on deep pressure in the gluteal and lumbar regions no characteristic features have marked these cases. These patients had been treated for a variety of disorders, including uterine displacements, sacro-iliac strain, Potts' disease, scoliosis and floating kidney, and in one woman a diagnosis of carcinomatosis was made. While Roberts has not been able always to demonstrate the presence of syphilis in these patients the fact remains that they all presented certain evidence of an hereditary taint and that the symptoms cleared up under mixed treatment.

Northwest Medicine, Seattle

January, 1919, **18**, No. 1

*Chronic Ulcerative Colitis. Review of 117 Cases. A. H. Logan.—p. 1.
Nitrous Oxid in Labor. R. S. Allison.—p. 9.

Chronic Ulcerative Colitis.—Logan shows that all forms of treatment of chronic ulcerative colitis are thus far unsatisfactory. The best results come from dieting and giving surgical rest to the colon, except in cases in which the condition is localized to the lower bowel within easy reach of enemas. Hyperemia of the bowel obtained by the use of hot water (120 F.) gives the best results to date. After the cure of the ulcer is obtained, marked deformity and stricture of the bowel remain permanently.

Pennsylvania Medical Journal, Athens

January, 1919, **22**, No. 4

Spontaneous Hemorrhage in Vitreous. E. Stieren.—p. 187.
Diseases of Uveal Tract and Their Sequelae. S. D. Risley.—p. 189.
Corneal Corpuscular Activity (Third Paper). J. E. Willetts.—p. 196.
Foot of American Soldier and Its Care. J. T. Rugh.—p. 198.
*Bone and Joint Casualties and Transport Splints. R. B. Osgood.—p. 205.
Care of Amputated in War. D. Silver.—p. 212.
*Ductless Glands in Military Practice. C. E. de M. Sajous.—p. 215.
*Present Status of Treatment of Syphilis. J. F. Schamberg.—p. 220.
Medical Conditions and Developments in Previously Recognized Complaints Due to War Emergency. J. M. Anders.—p. 225.
Place of Medical Inspector in Preventive Medicine. C. R. Phillips.—p. 234.
Scientific Medicine. What It Is and What It Is Not. E. Linton.—p. 236.
Eastward Ho. W. B. Konkle.—p. 240.

Bone and Joint Casualties.—Abstracted in THE JOURNAL, Nov. 23, 1918, p. 1770.

Ductless Glands in Military Practice.—Abstracted in THE JOURNAL, Nov. 9, 1918, p. 1608.

Treatment of Syphilis.—Abstracted in THE JOURNAL, Nov. 16, 1918, p. 1690.

Surgery, Gynecology and Obstetrics, Chicago

January, 1919, **28**, No. 1

*Gunshot Wounds of Lung and Their Treatment at Front. P. Duval.—p. 1.
*Treatment of Chest Wounds: Artificial Pneumothorax. R. Bastianelli.—p. 5.
*Early Treatment of Gunshot Wounds of Chest. G. E. Gask.—p. 12.
*Later Stages of Gunshot Wounds of Chest. G. G. Turner.—p. 17.
*Early Treatment of War Wounds. G. E. Gask.—p. 24.
*Acute Perforations of Abdominal Viscera. W. J. Mayo.—p. 28.
*Torsion of Great Omentum During Pregnancy. J. L. Bubis.—p. 33.
*Duodenectomy—Its Effect on Life of An Animal: Transplantation of Pancreatic Duct. E. G. Grey.—p. 36.
Mesodermal Mixed Tumors of Uterus: Case of Botrioid Chondrosarcoma of Endometrium. I. Perlstein.—p. 43.
*Shall Operation for Hypertrophied Prostate Be Done in Two Stages? F. R. Wright.—p. 56.
*Variety of Massive Syphilitic Splenomegaly Attended by Remarkable Vascular Changes. D. Symmers, A. O. Gettler and W. M. Johnson.—p. 58.
Treatment of Retrodisplacement of Uterus at Washington University Out-Patient Department and Barnes Hospital. E. C. Sage and Q. U. Newell.—p. 68.
*Carcinoma of Stomach: Three Cases With No Recurrence Five Years After Operation. J. Douglas.—p. 76.
*Simple and Expeditious Method (E. E. Montgomery) of Performing Abdominal Incision. P. B. Bland.—p. 83.
*Operation for Cure of Incontinence of Urine. H. H. Young.—p. 84.
*Method of Draining Bladder After Suprapubic Prostatectomy. E. D. Martin.—p. 91.

Treatment of Gunshot Wounds of Lung at Front.—Duval claims that of gunshot wounds of the lung, the general mortality in the advanced ambulances and in the hospitals of evacuation was on an average 30 per cent., this percentage not taking into account a large number of deaths which occurred in the advanced posts and in the base hospitals. The predominant causes of death were hemorrhage, mechanical troubles of respiration from open thorax, and, above all, infection of the lung and pleura. Duval emphasizes that a gunshot wound of the lung presents exactly the same lesions as does any other war wound, and is subject to the same evolution. A lung wounded by a fragment of shell is always contaminated and later on infected by the same anaerobic germs which infect all war wounds; e. g., *B. perfringens, Vibrion septicus.* There are also often present streptococci, as well as those organisms which are the normal inhabitants of the bronchial passages. A wound of the lung has the same period of infection as any other wound. Associated with it, however, is a serious complication; namely, infection of the pleural cavity.

Duval's statistics from the Battle of the Somme where, excluding operations of urgency, cases were treated medically, show a mortality of 20 per cent. in 300 cases. In a later series when the operative treatment was employed, eighteen cases were operated out of 118 and no deaths; 100 cases treated immediately with one death from empyema. In a total of 136 cases—118 not urgent and 18 urgent—the general mortality was 9 per cent. It will be seen, therefore, that surgical treatment lowers the mortality very considerably. What is more, when septic complications do occur, they are less serious. Surgical treatment of the lung should, therefore, be considered as the logical prophylactic procedure to prevent sepsis.

Artificial Pneumothorax in Treatment of Chest Wounds.—Bastianelli reports on the use of artificial pneumothorax in cases of chest wounds. Of 290 penetrating chest wounds, there were with closed chest, 206. Of these 206 patients, 88 were treated by pneumothorax, and 118 by thoracocentesis and pneumothorax, with a mortality of 7 or 3.4 per cent. Of these, 3 were due to empyema, 1 to pulmonary abscess, 3 to septicemia. Of 84 cases of open chest wounds, 19 or 22.6 per cent. terminated fatally. Of the 19 dead, 1 patient died before reaching the hospital, 7 patients had bled and were shocked so severely that nothing but, perhaps, transfusion could have helped them. Subtracting these 8 cases, there remained 76 in which the treatment could be tried. In these 76, there were 11 deaths or 14.4 per cent. Of these, 7 were due to empyema, 4 to septicemia. Empyema occurred altogether 11 times but only in the cases treated by permanent closure of the parietal wound with the rubber bag. Since this procedure has been resorted to for emergency only and the wound has been sutured airtight according to Bastianelli's principles, only 2 deaths or 5.7 per cent. occurred in 35 cases.

Early Treatment of Gunshot Wounds of Chest.—The principle to be aimed at in the treatment of these cases, in Gask's opinion, is the early mechanical cleansing of the wound, both of the chest wall and of the injured viscera, the evacuation of all foreign bodies and of effused blood from the pleural cavity; the repair or suture of the damaged lung and the closure of the chest cavity by suture.

Operation in Later Stages of Gunshot Wounds of Chest.—The indications for operation in these late cases laid down by Turner are: 1. Foreign bodies in the parieties with or without sinuses. 2. Foreign bodies in the lung irrespective of size if associated with persistent cough, hemorrhage, or suppuration. 3. Large foreign bodies in the lung, even if the symptoms are purely nervous. 4. All foreign bodies lodged in the pleura with or without empyema. 5. All cases of infected hemothorax. 6. All cases of through-and-through wounds with shrinking of the side, lessened lung expansion, and interference with movements of the diaphragm in which treatment by exercises, etc., has failed.

Early Treatment of War Wounds.—The basis of all successful treatment of wounds, Gask says, is early mechanical cleansing by surgical operation conducted under aseptic precautions. By this is meant the removal of all dead or damaged tissue, together with all foreign bodies such as the missile, portions of clothing, or splinters of wood. If this is done and is followed by closure of the wound either immediately by "primary suture" or a few days later by "delayed primary suture," then a very large percentage of wounds heal by first intention, with a resultant saving of a great many lives and an immense reduction in the period of convalescence, labor of medical officers and of dressing material. The important thing is that a wound should be subjected to a complete, early, mechanical cleansing before organisms have time to multiply and invade tissues. If this is done, Gask says it matters little whether a wound is swabbed with ether, flushed with Carrel-Dakin solution, smeared with "bipp" paste, or packed with flavine. As long as the wound is cleansed mechanically and no more organisms are put in, then the wound will remain clean and may be closed at an early date.

Acute Perforations of Abdominal Viscera.—Mayo's experience has convinced him that a considerable percentage of free perforations are spontaneously closed and that the area of peritonitis is limited through natural processes; the death rate is possibly about 30 per cent. but the 70 per cent. of patients who may recover spontaneously from the attack are not cured. An exploration through a longitudinal incision just to the right of the midline gives the surgeon an opportunity to make a careful exploration and to deal with any or all varieties of perforation. Early operation, that is within the first eight hours, barring accident, means recovery, because the stage of contamination has not yet passed on to infective peritonitis, and measures may still be taken for the permanent cure of the condition which leads to the perforation. Chronic conditions usually precede perforation and give ample warning of their presence before it takes place. While this is accepted, so far as the appendix is concerned, it has not been so generally recognized that gallstones are foreign bodies which need only infection to lead to the most widespread peritonitis, cholangitis, biliary cirrhosis and pancreatitis. Chronic ulcers of the stomach and duodenum, after a reasonable attempt has been made at medical cure, should be looked on as surgical maladies.

Torsion of Great Omentum During Pregnancy.—Bubis believes that his case was probably an adhesion of the tip of the omentum to the culdesac. The pressure from the growing uterus and the peristaltic action of the intestines, together with the congestion of the veins of the great omentum, were undoubtedly secondary causes of this condition. A localized point of tenderness, normal temperature, pulse and respiration, and the absence of nausea and vomiting in the early stages of pregnancy, are pointed out as constituting a group of symptoms very suggestive of torsion of the great omentum. One hundred and thirteen similar cases are recorded in the literature.

Duodenectomy: Transplantation of Pancreatic Duct.—Grey's experiments demonstrate, first, that the major pancreatic duct can be transplanted successfully into the jejunum. Many months subsequent to this operation nothing abnormal was made out in the microscopic or the gross architecture of the pancreas, except a dilatation of the duct, most apparent in the third portion proximal to the intestine. The ostium at the lumen of the bowel remains patent. Second, the biliary and the pancreatic secretions may be diverted successfully from the duodenum into the upper jejunum. The withdrawal of these alkaline juices from the duodenum must profoundly affect the chemistry of duodenal digestion, since peptic ulcers not infrequently decelop here under such condition. The subsequent resection of the duodenum and the suture of the jejunum (which now receives the pancreatic juice) to the stomach eliminates this complication. Third, it is apparent from the protocol of the duodenectomized animals that it is possible to resect the duodenum—every trace of mucosa and approximately all of the muscular coats—without embarrassing the vascular supply of the adjacent pancreas. This accomplishment does away with the necessity of excising the greater portion of the gland, a recourse to which Minkowski was forced to turn when he sacrificed the pancreaticoduodenal vessels with the duodenum. Fourth, success can only be looked for in excising the duodenum and carrying out the reconstructive steps when the operation is divided into a number of stages, leaving an interval of several weeks, at least, between the successive steps of the procedure.

Grey's experiments afford indisputable evidence that the presence of the duodenum is not essential to the life and comparative good health of a dog, at least for nine and one-half months, provided that the pancreas and the liver continue actively to discharge their respective secretions into the gastro-intestinal tract. From these considerations, then, it is evident that the conclusions of Stassoff regarding the inability of the remaining portion of gastro-intestinal tract to compensate for the loss of the duodenum are not substantiated by experiment.

Operation for Hypertrophied Prostate.—Wright's objection to doing suprapubic cystotomy as a preliminary to a prostatectomy is that if the patient becomes uremic after having established continuous drainage by cystotomy, one cannot refill the pelvis of the kidney and replace the kidney tubules to the abnormal position under which they formerly functionated. On the other hand, by doing preliminary drainage with a catheter, if the patient begins to show signs of uremia, one can withdraw the catheter and in a few hours the pelvis of the kidney will refill and the kidney tubules, being replaced to their abnormal position, will again functionate. The cause of death is the sudden emptying of the renal pelvis. Wright says that cystotomy should be reserved for use in those cases where catheterization, for any reason, is impossible; or, for use in those cases of acute cystitis that do not do well with a permanent catheter. If compelled to do a cystotomy, it should only be performed after catheterization or aspiration of the bladder has been carried on for several days.

Vascular Changes in Massive Syphilitic Splenomegaly.—Symmers and his associates report on the results of exami-

nation of six spleens. The variety of splenomegaly described was encountered in syphilitic subjects only. In the splenic substance were visible variable numbers of pinhead-sized, rounded, oval, or angulated bodies with a brownish or yellowish brown, granular looking center, and with or without a peripheral zone of red cells. These bodies which correspond, histologically, to sclerosis and mineralization of the smaller arteries, are characteristic and readily identified, and are distinct from anything familiarly encountered in the naked eye examination of the spleen. The substance of the spleen presents a reddish, flesh-like appearance, is leathery in consistence, and shows, on section, numerous small vessels whose walls are pale and thickened, correponding, microscopically, to venules in or around which hyaline deposits have occurred, but which are immune from infiltration by mineral salts. Hemorrhages may be seen by the naked eye and, histologically, are found in various stages of organization. In addition, the splenic substance is extensively replaced by the productive overgrowth of connective tissue of inflammatory origin.

Carcinoma of Stomach.—In each of the three cases reported by Douglas resection of about one third of the pyloric end of the stomach was done. The first case is of special interest because, notwithstanding the presence of a tumor of which the patient was herself conscious for eighteen months before operation, and although microscopic examination demonstrated scirrhus carcinoma, the tumor was not adherent to the surrounding parts, the operation was not technically difficult, and the lymph glands in the pyloric regions, although enlarged, were not the seat of malignant metastases. The second case presented several unusual conditions. First, the age of the patient, 30, which is rather an early age for the appearance of carcinoma of the stomach. Second, the proof, both from the history and the pathologic findings, of the development of carcinoma in the edge of a pre-existing ulcer. Third, the evidence of an old perforation which had been closed by adhesions to the liver, the capsule of which formed part of the new base of the ulcer. Fourth, the technical difficulty of the stomach resection, necessitating a resection of that part of the liver adherent to the base of the ulcer. The chief interest in the third case was the age of the patient, 71 years. This case also demonstrated that although the patient may be emaciated and weakened as a result of the pyloric obstruction, in the absence of metastases, age is not necessarily a contra-indication to a radical operation.

Simple and Expeditious Method of Performing Abdominal Incision.—In this method the gloved hands of the surgeon and his assistant, protected by gauze pads take the place of retractors and clamps. Complete protection against skin contact is said to be afforded.

Operation for Incontinence of Urine.—Young does a plastic operation on the internal and external sphincters in cases of incontinence of urine of long duration in which both internal and external sphincters have been destroyed by previous operative trauma.

Simple Method of Draining Bladder.—Martin uses a large catheter and a piece of rubber tubing, one-half inch in diameter, long enough to reach from the fundus of the bladder to a point 1 inch above the skin. Several small holes are cut in the tube near the end to be placed in the bladder, and one at the level of the skin, large enough to insert the catheter snugly so that the urine will not escape. The catheter is pulled through this opening to about one-half inch from the bottom of the large tube, the tube is introduced into the bladder and the wound closed tightly around it. As soon as the urine rises in the tube above the point where the catheter is inserted, it will prime the catheter and empty the bladder.

West Virginia Medical Journal, Huntington

October, 1918, **13**, No. 4

Treatment of Constipation in Infancy. C. L. Holland.—p. 121.
Infantile Diarrhea; Etiology and Treatment. C. A. Groomes.—p. 124.
Carrier Problem. A. Lederer.—p. 127.
Nephritis; Variety Classification and Treatment. S. D. Hatfield.—p. 133.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1918, **23**, No. 7

Electric Stimulation in War Injuries, with Special Reference to Ununited Fracture. A. E. Barclay.—p. 205.
Electrolytic Treatment of Lupus of Mucous Cavities by Nascent Iodin Method. J. D. Harris.—p. 222.
Congenital Variations of Big Toe Sesamoids. S. G. Scott.—p. 224.
*New Roentgen Ray Unit (Rad) in Roentgenotherapy. S. Russ.—p. 226.

New Roentgen Ray Unit in Roentgenotherapy.—The unit proposed by Russ is that quantity of roentgen rays which when absorbed will cause the destruction of the cells in question, and the name suggested for the unit is the Rad. The photographic action of the rays which are being administered to the patient is obtained on a photographic plate; on the same plate is impressed the photographic effect of a standard source of radiation; for convenience this is a capsule of radium emitting beta and gamma rays. The plate is developed with any developer, and with no restrictions as to time or temperature—any of these variables will affect the roentgen ray and the radium units to an equal degree; a comparison is then made between the photographic impressions so obtained. Assuming that the roentgen-ray tint for an exposure of ten seconds was equal to that obtained with an exposure of six seconds with the radium. The radium capsule, when applied to malignant cells, causes complete inhibition of their proliferation after an exposure thereto for one hour; this latter quantity is the suggested unit, namely, the Rad. Hence, the dose of roentgen rays at the position occupied by the plate during the ten seconds' exposure would be $\frac{1}{600}$ Rad. Supposing that during a seance the tumor cells had been exposed for twenty minutes to the above intensity of roentgen rays, the dose received would be $\frac{20 \times 60}{10} \times \frac{1}{600} = \frac{1}{5}$ Rad.

British Medical Journal, London

Dec. 28, 1918, **2**, No. 3026

Treatment of Some Common Female Ailments. F. J. McCann.—p. 705.
Gonorrhea in Women. W. E. Fothergill.—p. 707.
*Pulmonary Spirochetosis. J. A. Thomson.—p. 709.
Epidemology of Amebic Dysentery. H. M. Woodcock.—p. 710.
Triangle Splint in Treatment of Compound Fractures of Humerus. P. Turner.—p. 711.
*Position of Operation for Excision of a Semilunar Cartilage in Military Surgery. T. E. Hammond.—p. 714.
Clean Milk Supply. S. Delepine.—p. 715.
*Camphor in Acute Influenza Bronchitis and Bronchopneumonia. P. L. Giuseppi.—p. 716.

Jan. 4, 1919, **1**, No. 3027

Severe Anemias of Pregnancy and Postpartum State. W. Osler.—p. 1.
*Influenza and Its Complications. R. Muir, and G. H. Wilson.—p. 3.
*After-Results of Stomach Operations. J. L. Stretton.—p. 5.
*Case of Valvular Disease of Heart, Showing Unusual Powers of Physical Endurance. R. D. Rudolf.—p. 7.
Nasal Diphtheria and Epidemic of Influenza. E. M. Payne.—p. 7.
Spontaneous Pneumothorax in Course of Influenza Pneumonia. F. P. Weber.—p. 8.

Pulmonary Spirochetosis.—Having found spirochetes in considerable numbers in the sputum of one patient, Thomson systematically examined the sputum of all patients complaining of coughs by simple stains and by the special stain for tubercle. He found that pulmonary (or bronchial) spirochetosis in a chronic form was apparently prevalent among this group of patients. Seventy-nine patients were examined; thirty-nine showed spirochetes and in two cases tubercle bacilli were present. Some of these cases simulated tuberculosis, others malaria. So far as could be ascertained from the physical signs, which were always of an indefinite character, there appeared to be no serious pulmonary lesions.

Operation for Excision of a Cartilage.—From Hammond's observations it would appear that soldiers do not do as well after this operation as do civilians. The average stay in hospital following an operation of the excision of a cartilage is in the case of civilians three weeks; in four weeks the

patient is again back at work. It has become increasingly evident that the prognosis in the case of soldiers is not nearly so good.

Camphor in Acute Influenzal Bronchitis and Bronchopneumonia.—Giuseppi treated 250 cases with camphor, with a mortality of one—a man who died after three days' illness from bronchopneumonia. The incidence of bronchopneumonia in the 250 cases was twenty-six, or 10 per cent.; in another series of 200 cases during the same outbreak, and untreated with camphor, the incidence was 8 per cent., but the number of deaths was four, a mortality of 2 per cent. The treatment adopted was the administration of pills containing 4 grains of camphor made up with soap, in mild cases three times daily and in the very acute cases every three hours. The treatment was continued until the temperature dropped and the signs of bronchitis or bronchopneumonia cleared up.

Influenza and Its Complications.—It is Muir's and Wilson's belief that Pfeiffer's bacillus plays a very important part in the production of the characteristic lesions of influenza.

After-Results of Stomach Operations.—In Stretton's series of 175 operations there were twenty-one cases of perforation of the stomach or duodenum. Ten of these patients were saved from death and only in one instance was there a recurrence. In the case of the eleven who died, perforation had existed for more than twenty-four hours when first seen. The gastro-enterostomy operations number 116. Some were performed with the object of giving temporary relief in cases of malignant disease, but the majority were for the purpose of establishing a new route for the exit of food into the jejunum, because the pylorus was partially occluded. In two cases the operation was performed for the relief of symptoms due to hourglass constriction of the stomach. In another case Stretton excised the hourglass constriction. The results in all three cases were equally satisfactory. Hence, Stretton prefers gastro-enterostomy since it is a far less serious operation than excision. The immediate mortality in this series of cases is 2 per cent. There were twelve cases of stomach cancer. One of these patients was operated on for carcinoma of the pylorus (partial gastrectomy). She is alive and well after 15 years.

Valvular Disease of Heart.—Rudolf cites a case of aortic incompetence, and possible stenosis, and of mitral leakage and probable stenosis in a soldier, aged 25, who not only stood the stress of active service in the front line for years and was at last only invalided on account of gassing but actually outrivalled all his fellows as an athlete. The case emphasizes the correctness of the view that has so often been urged in recent years by Sir James Mackenzie and others, that everything depends on the state of the heart muscle. This patient had evidently an exceptionally strong and sound myocardium.

Bulletin of Naval Medical Association of Japan, Tokyo

September, 1918, No. 20

*Variability of Paratyphoid Bacilli. M. Maruta.—p. 1.
Bone-Grafting in Surgery. K. Kuroiwa.—p. 2.

Variability of Paratyphoid Bacilli.—Maruta, working in Kure Naval Hospital in 1917, proved in the case of a patient discharging paratyphoid A bacillus in his feces, that an abnormal type of that bacillus began to be discharged along with the normal type, after the clinical signs had entirely disappeared. He could also isolate two types of bacilli discharged in the feces of a carrier of paratyphoid B bacillus. The duration of the discharge in the feces of the abnormal paratyphoid A bacillus was about one month, while the corresponding type of paratyphoid B bacillus continued to be discharged for six months. Both abnormal types of paratyphoid A and B bacilli had many common features. Serologically there was no difference between the normal and abnormal types. Maruta suggests that these abnormal types were developed from the normal ones which invaded the gallbladder of the patients; and, consequently, patients discharging these abnormal types may be regarded as permanent carriers. Experiments made to get the normal types from these abnormal ones, by passing the latter through animal bodies are unsuccessful.

Lancet, London

Jan. 4, 1919, **1**, No. 1

*Influenzo-Pneumococcal and Influenzo-Streptococcal Septicemia. A. Abrahams, N. Hallows and H. French.—p. 1.
Comparative Pathology of Influenza. G. R. Murray.—p. 12.
*B. Multifermentans-Tenalbus. J. L. Stoddard—p. 12.
Spinal Anesthesia. F. S. Rood.—p. 14.
*Infantile Scurvy. Antiscorbutic Factor of Lemon Juice in Treatment. A. Harden, S. S. Zilva and G. F. Still.—p. 17.
Hysterical Vomiting in Soldiers. W. R. Reynell.—p. 18.

Influenzal Septicemia.—As to the pneumonic incidence in influenza cases, Abrahams and his associates found that out of 1,000 cases of "influenza" upward of 800 have taken an ordinary simple uncomplicated course with fairly speedy recovery and without sequelae. The remaining 200 have become more or less pulmonary; of these, perhaps, eighty being of moderate severity; the remaining 120 patients have been desperately ill; of these latter somewhere between sixty and eighty have died. In these latter cases the essential feature is an infection by *B. influenzae* with a secondary infection by some other organism, the pneumococcus, *Streptococcus pyogenes-longus*, or a "diplostreptococcus," the virulence of which appears to be exalted by the initial influenzal infection. The characteristic features of the septicemic type of case are variable lung symptoms, ranging from slight bronchitis to lobar pneumonia, very characteristic heliotrope lividity, dyspnea, or rather polypnea, and very rarely orthopnea. Infection takes place in the upper respiratory passages, and involves the accessory nasal sinuses, where a septic sinusitis develops. From this and possibly other foci as yet undermined, the toxemia or septicemia originates. In view of the large number of instances in which the diplostreptococcus has been isolated in pure culture from the heart's blood and internal organs immediately after death, it is concluded that this organism plays an important rôle in the fatal cases. The large majority of cases of septicemic type terminate fatally in spite of any form of treatment. Patients have recovered who have been given no specific treatment of any kind.

B. Multifermentans-Tenalbus in Gas Gangrene.—This bacillus was isolated by Stoddard from a case of gas gangrene of the arm which recovered promptly on excision of infected muscle. There appeared to be a production of lesions with *B. sporogenes* and *B. multifermentans* in combination which were not produced with larger doses of either alone. In one case death was produced in twenty-four hours. The lesions, as a rule, appeared to be local, consisting in swelling and tenderness for a short period and in a muscle infection for one to three days. *B. multifermentans* alone in moderate doses seems to be nonpathogenic; with *B. sporogenes* both become able to cross the threshold of the animal's resistance, but do not give extensive lesions. The morphology and cultural characteristics of this bacillus are described in detail.

Lemon Juice Residue in Infantile Scurvy.—Four cases of infantile scurvy are cited by Harden and his associates in which they used the residue of lemon juice from which the free citric and other acids had been removed. This preparation can be concentrated in bulk to any desired volume, or even evaporated down almost to dryness without losing its potency as an antiscorbutic. The almost complete elimination of the acids from the fruit juice removes or diminishes its irritant property, and the concentration of bulk makes it possible to give much larger quantities of the antiscorbutic factor than has hitherto been practicable. The outstanding feature of this treatment was the use for the first time clinically of the antiscorbutic factor separated from the greater part of the inactive components of the foodstuff in which it occurs. Moreover, this antiscorbutic factor was given in concentration at least double—in one case seven times—as strong as that in which it occurs naturally in the foodstuff (lemon) from which it was obtained. The treatment was thus, so to speak, "intensive." The result was found to be extremely rapid amelioration of the symptoms.

Medical Journal of Australia, Sydney

Nov. 30, 1918, **2**, No. 22

Ministry of Health and National Health Service. F. S. Hone.—p. 445.
Emergency Surgery. A. S. M. Tymms.—p. 449.

Dec. 7, 1918, **2**, No. 23

Asthma, From Point of View of Rhinologist. R. G. Brown.—p. 463.
Injuries to Fingers. W. K. Hughes.—p. 465.
Emergency Surgery. A. S. M. Tymms.—p. 466.

Dec. 21, 1918, **2**, No. 25

Hookworm Campaign. J. H. Waite.—p. 505.
*New Operation for Bicornate Uterus. A. N. McArthur.—p. 510.

Dec. 28, 1918, **2**, No. 26

Version in Midwifery. M. Culpin.—p. 529.

New Operation for Bicornate Uterus.—In the case cited, which was one of double uterus with a certain amount of fusion of the cervices and lower part of the bodies only, McArthur cut out completely somewhat less than the inner half of the cervices, the incision extending through antero-posteriorly, leaving the outer halves of each cervical canal. The posterior edges of the right and left cervical canals were then united, as were the anterior edges, making one cervix and one cervical cavity. Intra-abdominal operation was then undertaken, and here a congenital defect was found. The mesentery of the sigmoid flexure had continued from the pelvis, and was attached between the juncture of the two uterine bodies. This was not an adhesion, but a definite mesentery. McArthur suggests that perhaps this congenital defect had prevented the müllerian ducts fusing in their upper segments during fetal life. This mesentery was removed by dissection and was replaced in a normal position. An incision was then made clear across the fundi of both uteri down into their cavities. A portion of the septum remaining between the two uterine bodies that had not been reached by the vaginal route was excised and the endometrium of the two halves was curetted. The two uteri were then sutured together just as one would sew up the two halves of a split uterus, and when the stitching was complete, the uterus presented an absolutely normal form, appearance and size.

Sei-I-Kwai Medical Journal, Tokyo

Nov. 10, 1918, **37**, No. 11

*Experimental Purpura Hemorrhagica Produced by Antibloodplatelet. T. Watabiki.—p. 47.

Experimental Purpura Hemorrhagica Produced by Anti-bloodplatelet.—The most interesting result of Watabiki's investigation was the fact that the subcutaneous injection of antibloodplatelet into animals produced typical purpura hemorrhagica, but guinea-pig's antibloodplatelet acted on guinea-pigs only. For isolating bloodplatelet, Watabiki found sodium citrate glucose salt solution best adapted to the purpose. Intraperitoneal injection caused a violent reaction producing typical purpura hemorrhagica, the animals dying in sixteen hours to four days. Intrapleural injection produced the same symptoms. Intravenous injection of anti-bloodplatelet caused instant death of the animal, and no peculiar symptoms could be observed on its dissection. Anti-bloodplatelet injection in excess of a fatal dose into an animal that was previously immunized by antibloodplatelet caused no change, but when the same quantity was injected into a normal animal it caused the death of the animal and showed purpura hemorrhagica on necropsy.

Bulletin de l'Académie de Médecine, Paris

Dec. 17, 1918, **80**, No. 50

Child Welfare Work in Paris District. A. Pinard.—p. 561.
*Mediastinal Emphysema. C. Achard and L. Binet.—p. 609.
*Early Treatment of Wounds of Eyes. F. de Lapersonne.—p. 613.
*Blood in Malaria. F. Barbary, Bizouard and Ciers.—p. 619.
*Purulent Pleurisy. L. Bérard and C. Dunet.—p. 622.

Emphysema of the Mediastinum.—Achard's research on dogs seems to show that mediastinal emphysema is merely part of a more extensive cervicothoraco-abdominal emphysema.

War Wounds of the Eyes.—De Lapersonne reviews the experiences with war wounds of the orbit at the Hotel-Dieu at Paris, a total of 2,449 cases. See Paris Letter.

Changes in the Blood During Malarial Attacks.—Barbary comments on the great destruction of reds and of the hematoblasts during the attacks of malaria. The resulting anemia is a chlorosis, the toxins of the disease inducing intense hemolysis at each attack. In treatment, therefore, it is important to supplement the action of quinin by measures to aid in the regeneration of the blood. The most effectual in this line, in his experience, was colloidal iron. In tenacious cases he gives this with the quinin in intravenous injections, on alternate days, without heeding the hours of the attacks.

Postinfluenzal Purulent Pleurisy.—Bérard and Dunet insist that pleurotomy is indicated in every case of this kind in child or adult. The incision in the eighth or ninth interspace to evacuate the pus allows introduction of the finger to determine the lowest point of the pleura as the patient lies semireclining, the usually preferred posture. In this position the lowest point is in front, and he makes an incision here (or extends the first incision), resecting the eighth or ninth rib at the anterior axillary line. After resection of the rib, the pleura is incised where the finger within makes it protrude, at the lowest point. What is left of the pyogenic membrane lining the pleural cavity has to be removed in toto; this can be done by swabbing out the pleural cavity with a sponge held in long forceps. This second incision can be postponed to a few days later if the condition is grave. One or two large drains are placed in the anterior incision. Twenty-four hours afterward Carrel tubes are introduced through the first incision and the pleural cavity is flushed every three hours with a small amount of some antiseptic solution under weak pressure. This irrigation is kept up for eight or ten days. After this the irrigation can be continued at need, using merely a syringe. The patient is got out of bed as soon as the temperature is normal, by the third or fourth day, as a rule. He is ordered to walk about the room regularly. This ensures better expansion of the lung, expansion of the chest, and perfect drainage. In twenty-two cases in which this *méthode ambulatoire* was applied, the results were extremely gratifying except in two cases in which the preexisting pneumonia proved fatal. The others were completely healed in fifteen, twenty or thirty days, according as the pneumococcus, the staphylococcus or the streptococcus was involved. There was no loss of weight and no deformity of the chest. The clearing out so completely of the pus prevents absorption of toxic substances, and the patients are left in good condition, gaining instead of losing in weight.

Lyon, Médical

October, 1918, **127**, No. 10

*Recurring Hydrarthrosis of the Knee. Tavernier.—p. 433.
Abnormal Propagation of Extracardiac Murmurs. L. Bouchut.—p. 439.
Charcoal in Treatment of Dysentery. P. Fayolle.—p. 446.
Chronic Lumbar Rheumatism. A. Léri.—p. 471.

Recurring Hydrarthrosis of the Knee.—Tavernier comments on the difficulty of ascertaining the cause in these cases, and reports instances in which the trouble was traced to an unsuspected foreign body in the joint or a synovial fringe or some lesion of the meniscus. One young girl, after a runaway accident, suffered constantly in the knee for a year but there was no apparent reaction in the joint nor atrophy of muscle. A minute fringelike projection on the meniscus was removed, and this materially reduced the pain without curing it completely. The pains in these puzzling cases spread through the whole knee and the joint may be tender throughout. He has operated in only four of his fifteen cases of dislocation of a meniscus. In two of the cases he removed the whole meniscus, as it was rough. The knee now in these two cases is indolent and there is no effusion. In complete extension the knee is solid, but when it is flexed there is a slight sideward movement but the joint is strong and serves perfectly in long walks and at the trade of cabinetmaker. Supervision of his cases for several years has shown that unless one's hand is forced by serious disturbances, it is better to advise the patients to wait, after a luxation, avoiding abrupt and violent movements, and lying down for a few days. Massage of the thigh muscles is useful to ward off atrophy, but he has seen very bad results from local massage,

exacerbation of the pains, and return of the hydrarthrosis. The patients say that rest relieves, while mobilization and massage aggravate the pains.

Paris Médical, Paris

Dec. 7, 1918, **8**, No. 49

*Diagnosis of Cancer of Lower Bowel. R. Bensaude.—p. 441.
*Pain in Stomach with Appendicitis. J. C. Roux.—p. 446.
*Gastric Ulcers Should Be Resected. P. Carnot.—p. 451.
*Operative Treatment of Gastric Ulcer. V. Pauchet.—p. 456.
Treatment of Ameba Carriers. M. Labbé.—p. 461.
*Chronic Amebic Dysentery. J. Carles.—p. 464.
Chloramin for Disinfection of Intestines. P. Carnot and T. Bondouy. —p. 468.

Dec. 14, 1918, **8**, No. 50

*Lumbar Puncture After Injury of Brain. H. Bouttier and B. J. Logre. —p. 477.
Traumatic Shock and Collapse. A. Lapointe.—p. 480.
*Rheumatoid Purpura. M. Lavergne.—p. 483.
*Reduction of Subtrochanter Fracture. Costantini and Vigot.—p. 486.
*Vocational Reeducation of the Maimed. R. Van Roy.—p. 487.

Diagnosis of Cancer in Rectum and Terminal Colon.—Bensaude asserts that scarcely a fortnight passes in which he does not encounter some case in which palpation or endoscopy does not reveal some previously ignored cancer or correct the diagnosis of cancer. Some patients were being treated for cancer when the trouble was merely amebic dysentery, or an inflammatory tumor, or simple hemorrhoids proved to be responsible for anemia ascribed to a cancer. In other cases the symptoms of tabes had been attributed to cancer. Simple congestion has been mistaken for cancer; the awkward introduction of the rectoscope having caused bleeding. But the inverse error, the mistaking of a cancer for some comparatively harmless lesion is much more common, especially the diagnosis of hemorrhoids or enterocolitis, when the disease is really malignant. In his private practice alone, he has encountered in the last five years sixteen cases of cancer mistaken for enterocolitis, and given long courses of treatment on this basis. The age is no criterion; he has had a case of cancer in the rectum in a girl of 19, and Quénu has reported cases at 21, 28 and 30. The general condition is not necessarily impaired, and the patient may even gain in weight.

Nothing is more obscure, he says, than the early stage of cancer of the rectum or colon. There may be absolutely nothing to call attention to the region. Even if diarrhea or tenacious constipation attract attention, the disturbance is usually located by the patient in the upper abdomen; he complains of flatulence and of pain around the umbilicus. Others complain of pain in the groin; in one case the man was being treated for rheumatism. Disease in the lower bowel renders the patients irritable, hyochondriac, and may deprive them of sleep—all of which sustains the assumption of nervousness. With endoscopy, adherent feces may mask the lesion. In one case an abscess concealed the cancer. Masking folds can be smoothed out by insufflation, or they can be altered by a change of position. When a minute cancerous nodule is found, it should suggest a primary cancer above. The cancer may be of the ulcerative or infiltration type. The latter is common with metastatic cancer; the primary growth is usually in the stomach and there are probably other cancerous growths along the intestinal tract. As positive findings with endoscopy are so instructive, examination may well commence with this, but no other means of examination should be neglected in dubious cases, radioscopy, palpation, a flexible probe, examination of stools, etc.

Pain and Ulcer in Stomach Secondary to Appendicitis.—Roux analyzes some American works of the last few years on the pains in the stomach and ulceration at the pylorus or in the duodenum, all secondary to acute, subacute or chronic appendicitis. In three of Roux' own cases of the kind the pains came on at once after eating anything. The epigastrium may be constantly tender. The pains may not develop until several hours after eating, but there is no such regularity of the time as with ordinary ulcer, and eating something does not relieve them. In another group of cases, actual gastric or duodenal ulcer develops a few days or months after an attack of appendicitis. In this type of cases, removal of the appendix does not cure all disturbances, as is the case with the merely painful gastropathies just mentioned. Some slight lesion in the mucosa allows an ulcer to develop in addition to the reflex disturbances responsible for the painful gastropathies. The irritation of the solar plexus from the appendicitis probably induces reflex spasm of the pylorus and may modify gastric secretion.

Resection of Gastric Ulcer.—Carnot's arguments present a good plea for resection of the ulcer as gastro-enterostomy alone does not ward off the danger of hemorrhage, perforation and malignant degeneration. Even resection, however, does not guarantee absolutely against these, although materially reducing the danger. It should be supplemented by prolonged medical treatment and dieting.

Surgical Treatment of Gastric Ulcer.—Pauchet states that half of all cancers in the human are in the stomach, and three-fourths of them are grafted on old chronic ulcers. With most of these there never were any characteristic symptoms, or the symptoms were mild and occurred only intermittently and at long intervals. He gives an illustrated description of the various technics that have proved most successful with the different kinds and locations of ulcers. Among the minor points he emphasizes are the necessity for swabbing the sutures with tincture of iodin before burying them; the use of OO catgut for the perforating sutures; changing gloves before suturing the wall; never forgetting to close the breach in the mesocolon, and always handling the tissues gently, never pulling on them or crushing them.

Treatment of Chronic Amebic Dysentery.—Carles admits the marvelous efficacy of emetin in acute amebic dysentery, but says it has relatively little action in chronic amebiasis. For this emetin and bismuth iodid seems to be preferable. It is important, however, to free the patient of any other helminths he is harboring, as even this drug is useless when there are other parasites besides the ameba. The specific treatment should be supplemented by treatment of the gastro-intestinal secretory insufficiency, gastric neurosis and enteritis from fermentation, if they are associated with the amebiasis. Chronic amebic dysentery has to be combated with chronic treatment; even if the cure seems complete, successive courses of the iodid are indispensable.

Lumbar Puncture with Skull Wounds.—Bouttier and Logre discuss the unilateral vascular disturbances liable to follow injury of the brain. These disturbances may be favorably modified by lumbar puncture. This throws light also on diagnosis and prognosis, and on the etiology.

Rheumatoid Purpura.—Lavergne reports three cases in children from 5 to 12 years old, in which intense gastro-intestinal disturbances and melena were traced to rheumatoid purpura. When a child over 5 develops abdominal pain, with or without vomiting, the possibility of rheumatoid purpura should always be borne in mind, and the eruption should be sought for, especially on the legs near the malleoli where it is usually most intense. Even if no eruption is discovered, the diagnosis should be long expectant before excluding purpura definitely. In the first case, sudden and lively pain in one knee and in the abdomen were the first symptoms. By the next day there was severe pain in the wrists, and the following day there was melena and a purpuric eruption on the legs. Then all the symptoms rapidly disappeared, but the fifteenth day the purpura alone returned. By the end of the fifth week the condition seemed to be entirely normal once more. In the second case the abdominal pain and occasional vomiting had kept up for a month, but there was nothing to call attention to any of the joints. About the thirty-third day a slight eruption on the legs confirmed the assumption of purpura. It was so slight that it would have been overlooked if it had not been sought with special care. In such cases appendicitis is suspected, and if there is blood in the stools, melena or invagination is accepted. Palpation is so painful that the child will not allow it. In the third case only the elasticity of the abdominal wall spoke against appendicitis. As there was no eruption and no pains in joints, the diagnosis wavered only between chronic invagination and duodenal ulcer. The green fecaloid vomit, blood in the stools

and the contrast between the pulse up to 120 and the normal temperature, with the intermittent character of the disturbances, were finally explained by the purpura eruption the sixteenth day.

Reduction of Subtrochanter Fracture.—Costantini and Vigot comment on the ease with which they were able to reduce and immobilize a subtrochanter fracture in three cases by placing the patient prone on a table, with an opening allowing the thigh to fall through, the heel suspended a little below the table, thus flexing the knee at a right angle This attitude brings all the parts into normal position for repair.

Vocational Reeducation of the Maimed.—Van Roy deplores the waste of time and opportunity when the maimed are allowed a convalescence furlough which usually confirms the vicious habits and contracture in the wounded, requiring weeks to undo. He declares that the professional training of the muscles should begin at the very earliest possible moment. It should be along the lines of the man's old trade when possible, or should aim to bring as many muscles as possible into play. Instead of the convalescence leave, the man should be compelled to go to work at his old trade, to a certain extent at least. If this is out of the question, he should be set to work in the fields or gardens. This would benefit him in every way, and hospitals should be planned to have fields or gardens available for the purpose. The question of rehabilitation of the maimed has numerous aspects according as the man requires vocational reeducation, functional restoration, physical reeducation, or vocational retraining if he is disqualified for his old vocation. If in addition the distinction is made between reeducating for military and for civil life, he thinks the results would be superior to those realized at present.

Presse Médicale, Paris

Dec. 12, 1918, **26**, No. 69

*Secondary Disturbances from Hysteria. G. Rousey, J. Boisseau and M. d'Oelsnitz.—p. 637.
Vitiligo and Syphilis. C. Withe and others.—p. 640.

Disturbances Secondary to Hysteria.—The paralysis and contracture in cases of hysteria have been called by some reflex nervous disturbances; others explain them by the dynamogenic theory. Roussy and his co-workers explain them by what they call the *théorie dyskinétique*. They regard the motor disturbances as of purely hysteric nature, or, as they prefer to say, pithiatic nature. All the other elements are secondary to the hysteria. In treatment, they focus their efforts to cure the hysteria by the usual psychotherapy. The immobilization of the parts to prevent their hurting, after a wound, or the vicious use of the member favors the development of the deformity in the predisposed, and the abnormal position impedes the circulation and the innervation. Passive exercise of the part is not of much use, but when the attempt is made to use the part normally, physiologic conditions begin to be restored. These hysteria patients, however, do not have the will power to attempt to use the part normally. Their frame of mind resembles that of the insured after an industrial accident. Experience with 2,000 cases of different psychoneuroses has demonstrated, they say, that this *syndrome d'utilisation vicieuse* or *syndrome dyskinétique* should be combated at the earliest possible moment. Physicians should watch out so that it should not be allowed to develop. The hysteria should be treated before these motor disturbances become a settled habit. Examination of the sound mate always reveals some predisposition on the part of vessel and nerve functioning.

Progrès Médical, Paris

Nov. 23, 1918, **33**, No. 47

Shell Shock. P. Blum and J. Poisson.—p. 393.
Treatment of Influenza. A. Vahram.—p. 395.

Nov. 30, 1918, **33**, No. 48

The Conception of Fever. Bernheim.—p. 401.
Camphorated Oil with Phosphorus in Influenza Asthenia. M. Loeper.—p. 401.
Incubation Period of Influenza. A. Bernard.—p. 403.
Share of Suprarenals in Metabolism of Sugar. A. Bernard.—p. 403.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 30, 1918, **48**, No. 48

*Large Doses of Camphor in Pneumonia. E. Feer.—p. 1601.
Treatment of Anemia. E. Bürgi.—p. 1604; W. Löffler.—p. 1618.

Camphor in Pneumonia.—Feer gives camphor in larger doses than others advise, and places it in the front rank in treatment of croupous and catarrhal pneumonia. It proved effectual also in the malignant pneumonia of the recent influenza epidemic in several apparently doomed cases. It is of not much use when given too timidly. One weakly boy of 6 with severe influenzal pneumonia, somnolency, cyanosis and high fever, weak pulse of 140 and 160, was given two daily subcutaneous injections of 10 c. c. of a 20 per cent. camphorated oil, and remarkable benefit followed, the albuminuria disappearing and consciousness returning. An empyema developed then which proved fatal the sixteenth day. The child had been given in eleven days 220 c. c., representing 44 gm. camphor. A delicate girl of 11 with influenzal pneumonia of left lower lobe and unilateral otitis media, with somnolency after the fifth day, was given from the sixth day on the same treatment as above. The seventh day the other lung showed infiltration; the twelfth day the whole of the first lung became infiltrated and the child seemed moribund, with tracheal râles. She recovered consciousness the fifteenth day and by the twenty-first the lungs were nearly all clear. During all this time she had been given the camphor, receiving thus 260 c.c of camphorated oil, representing 52 gm. camphor. These cases demonstrate that even children can bear large doses with advantage. For children under 6, he gives one or two injections of from 5 to 7.5 c.c of the 20 per cent. camphorated oil. He did not witness any benefit from normal serum or polyvalent pneumococcus serum, sometimes given before development of the pneumonia, but always without effect. The camphor, in large doses, on the other hand, is unable to abort the pneumonia, but it modifies conditions in the circulation so favorably that even desperate cases may be enabled to pull through. In adults he advocates injecting 10 or 15 c.c of the 20 per cent. camphorated oil twice a day or even more at need. The physician makes the injection himself at his two calls, or he might inject 20 c.c if unable to make more than one call a day. He adds that there is scarcely any danger of giving too large and injurious doses as is liable to be the case with digitalis and caffein. He has never observed any injury from the large doses of camphor or heard of any. Only Weintraud has mentioned agitation under its action, while Feer himself has found it display rather a sedative action. Harm from it in these doses could occur only when, from lack of grape sugar and oxygen in the organism, the formation of glycuronic acid, with which the camphor is harmlessly eliminated, might be hampered.

Policlinico, Rome

Nov. 15, 1918, Surgical Section No. 11

*Putrid Infection of Wounds. L. Fioravanti.—p. 321. Conclusion.
*Oblique Suture of Intestine. A. L. Soresi.—p. 340.

Putrid Infection of Wounds.—Fioravanti recalls that the gas-producing bacteria are all anaerobic, while the nongas-producing are the aerobic proteus, subtilis and colon bacilli. Gaseous phlegmons are the same by cause and nature as the gas gangrene, but the limitation of the process renders it more amenable to surgical measures. Gas may be produced by decay of tissues under the action of aerobic bacteria, but this is quite different from gas gangrene. The serum of the wounded with putrid infection never displayed any agglutinating properties for any of the germs, aerobic or anaerobic. This he ascribes to the intense agglutination induced in the tissues of the putrid wound; this prevents absorption of the antibodies which would generate the agglutinins. As the wound heals and loses its putrid character, the antibodies become absorbed and agglutinins are developed which clump the staphylococci, etc., isolated from the purulent secretions of the wound.

Oblique Entero-Anastomosis.—Soresi gives thirteen illustrations of his method of uniting the intestine which avoids the drawbacks of end-to-end and of side-to-side suture, and

leaves the intestine wider at the point of suture, thus obviating any tendency to stenosis. In his preliminary report he called his technic a new method of lateral anastomosis, but he now prefers to style it oblique anastomosis, as it is not a lateral suture although it begins with this, the side-to-side suture being a mattress suture with silk 40 cm. long. The ends of the stumps are then slit lengthwise, parallel to and about 3 cm. from the seroserosa suture, stopping 3 mm. short of its ends. This leaves six raw edges, four lengthwise and two transverse, and the corner is cut off rounding. The inner raw edges are then sutured together with catgut. As there is now no corner, there is then left only one long single raw edge on each stump. These edges are sutured together, the slanting edge on one stump fitting against what was the straight transverse edge on the other. The one single suture thread does for the entire operation. The two ends of the suture thread meet in the middle, and then complete the seroserosa suture all around. The result is like an end-to-end suture, but the line of juncture is oblique. It is safer than the end-to-end, takes less time, not over five or six minutes in all, while the single suture thread used much facilitates the whole. He uses black silk, as it shows up better during the operation. One important feature of the technic is that as the stitches are taken they are drawn taut in turn, and held firm, with anatomic forceps, which also inverts the sutured edges. The segment containing this anastomosis is much wider than the normal bowel, and retains all its anatomic and physiologic relations, the natural course of the feces unmodified. His preliminary communication was summarized in THE JOURNAL March 6, 1915, p. 859. The years of experience with the method since, he reiterates, have confirmed its advantages.

Rivista Critica di Clinica Medica, Florence

Oct. 26, 1918, **19**, No. 43

*Cartilage Grafts in Reconstruction After War Wounds. G. Fantozzi. p. 505. Commenced in No. 41, p. 481.

Nov. 9, 1918, **19**, No. 45

*Acidity of the Urine. E. and E. Pittarelli.—p. 529. Commenced in No. 44, p. 517.

Cartilage Grafts.—Fantozzi declares that the results obtained in the last eight years with cartilage grafts in Ceci's surgical service at Pisa have been so gratifying that high hopes can be based on this technic reparative orthopedic surgery. Cartilage taken from the costal arch was utilized to reconstruct the tip of the nose, the septum, the ear, and correct saddle nose and other deformities, with the finest results. In none of the numerous cases was there anything approaching a failure. He describes what has been done by others in the line of cartilage grafts, and gives the details of a case in which the tip of the nose had been bitten off. The patient was a young Italian woman, the victim of an atrocity in the war between Italy and Turkey. The nose was reconstructed in 1911, and the results during the seven years since have been beyond criticism. The new nose built up with cartilage and with a skin flap from the left arm is better looking than the original nose, to judge from an old photograph.

In reconstruction work after war wounds, he advises allowing several months to elapse before attempting it, as there is danger of rousing latent infection otherwise. Massage, heliotherapy and other measures, especially hot applications, to enhance the vitality in the parts will facilitate the task of repair by softening cicatricial tissue and warding off adhesions. A preliminary course of iodids or injections of thiosinamin might prove useful in certain cases. Radiography should not be neglected, as this might reveal foreign bodies, scraps of projectiles, etc., which might compromise the outcome of the operation. He gives nearly three pages of bibliography, set solid, on cartilage grafts and reports two cases in which cartilage was used to reconstruct the face after an extensive war wound of the face. One of the men had a comminuted fracture of the zygomatic bone with loss of the entire malar bone. A plaster model of the cavity left by the loss of the malar bone was first made. Then a piece of cartilage was cut from the costal arch and modeled to copy the plaster cast. It was then fitted into the face and smaller pieces of cartilage were fitted in above to reconstruct the orbit and the projection of the zygoma. The skin was sutured, leaving a small glass drain for one day. A starch dressing was applied, and the region was dressed four times in a week, by which time healing by primary intention was complete.

Acidity of the Urine.—The Pittarellis report critical and experimental research in addition to their clinical analysis of 7,500 specimens of urine, which have established, they think, that the acidity of the urine is not the simple thing generally accepted. There are at least two acidities, one reacting to methyl orange, and the other to phenolphthalein. It would be interesting to study the proportions between them in different diseases. The acidity that responds to methyl orange is not constant, like the other. There is also a latent acidity, which can be rendered evident by addition of formaldehyd. The true acidity of the urine, that is, the acidity due to the free or semicombined acids, forms scarcely two-thirds of the acidity we estimate with litmus paper, etc. The other third is made up of salts of weak bases combined with weak acids. This proportion keeps quite constant. The true acidity of the urine, therefore, is always lower than the figures hitherto accepted as correct; it corresponds on an average to an acid solution of the strength of thirtieth-normal.

To distinguish between the real and the apparent acidity of the urine, two equal volumes of urine are treated each with several c.c. of calcium chlorid to transform all the phosphoric acid into calcium salts. Then one specimen is tinted with phenolphthalein and the other with dimethyl-amido-azobenzin, and the first is rendered neutral with tenth normal sodium hydroxid solution and the other with tenth normal hydrochloric acid solution. The alkali required for the first specimen corresponds to the sum of the free weak acids and the combined weak acids. The acid required for the second specimen corresponds to the weak bases combined with the weak acids and therefore also to these weak acids transformed into salts. The difference between the volume of the sodium hydroxid and the volume of the hydrochloric acid corresponds to the free acids.

Anales de la Facultad de Medicina, Lima

September-October, 1918, **2**, No. 5

Aneurysm of Ascending Aorta. E. Odriozola.—p. 101.
*Pituitary Syndrome. M. G. Olaechea.—p. 103.
*Ambard's Ureosecretory Coefficient. M. A. Velasquez.—p. 110.
Saccharomycosis of Lips. R. E. Ribeyro.—p. 122.
*Early Psychology in Peru. H. Valdizan.—p. 128. Cont'n.
*Bronchopulmonary Spirochetosis. A. Corveto.—p. 141.
Psychanalysis. H. F. Delgado.—p. 148. Cont'n.

Pituitary Syndrome.—Olaechea reports a case which he says is a counterpart of one reported in 1917 by Claude and Lhermitte as a case of infundibular syndrome from a tumor in the third ventricle. Olaechea's patient was a woman of 35, previously healthy. The first symptoms were impairment of vision and reduced sensibility in the right side of the face, mucosa of the cheek, the teeth, and hyperesthesia in the right side of the tongue, with deafness and exaggerated tendon reflexes on that side. There was bilateral choked disk, and in walking she diverged constantly to the right and the head became twisted toward the right. In ten months the blindness was total and muscular contractions interfered with chewing; sometimes fluids were expelled through the nose. The temperature, respiration, circulation and the digestive and urinary apparatus seemed to be functioning normally, until toward the last intense headaches and tachycardia followed any attempt to sit up. There were also periods of narcolepsy and pronounced polyuria. The symptoms suggested leptomeningitis in patches. The cerebrospinal fluid was limpid but contained tubercle bacilli. There was evidently disturbance in pituitary functioning from compression of the infundibulum.

Ambard's Ureosecretory Constant.—Velasquez remarks that Ambard's formula cannot be used when the output of urine is less than 500 c.c. in the twenty-four hours. If the coefficient is only temporarily low, due to passive congestion from weak

heart action, improving conditions in the heart functioning will raise the Ambard index. The formula cannot be depended on, he reiterates, unless the urea in the blood and in the urine and the ammonia in the urine are all determined.

History of Early Spanish Colony in Peru.—In this instalment of his work "Locos de la Colonia," Valdizan describes the fools and buffoons kept by the governors of the province and others. He mentions also other persons who were or pretended to be half-witted, some of whom played a prominent part in the life of the colony.

Bronchopulmonary Spirochetosis.—Corvetto reviews the present status of what Castellani described in 1905 as bronchospirochetosis, and describes a case personally observed. The patient was a young Indian policeman and the disease was chronic with occasional acute exacerbations. The onset was with a chill and high fever for four days, but by the end of the month there was only a dry cough with serous and bloody expectoration. The microscope showed the sputum swarming with spirochetes. Under symptomatic measures they gradually disappeared from the sputum until by the end of the month only very few could be found, and the man has been in apparently complete health since. Corvetto warns that so many Asiatics are coming to Peru now that there is danger of an epidemic of this bronchopulmonary spirochetosis.

Archivos Españoles de Pediatria, Madrid

October, 1918, **2**, No. 12

*Asthma in Children. J. G. del Diestro.—p. 577.
*Mycosis of Pharynx in Child. A. M. Calderin.—p. 596.

Asthma in Children.—Diestro reviews the features which differentiate asthma in children from the attacks of suffocation with the exudative diathesis and spasmophilia, which resemble but are not true asthma. He describes four cases of the latter in children from 8 months to 9 years old, previously apparently healthy. Two of these children were of the same family and the attacks came on at the age of 6, when the children were taken from Madrid to a northern summer resort. The mother was subject to similar attacks, and the characteristic crystals were found in the sputum of all three. The infant's dyspnea and cyanosis were extreme and a gouty taint was evident in this family. In all the children the attacks grew less severe and less frequent, and the children seemed to outgrow the tendency in from two to four years. In one of the cases true asthma coincided with enlarged tuberculous glands in the mediastinum, but the crystals confirmed the diagnosis. Infarcts in tuberculous mediastinal glands induced in some other children attacks deceptively resembling true asthma, and improving under tuberculin treatment. One of the children died of meningitis a year later. Children with the exudative diathesis may present recurring tracheobronchitis or attacks of asthma. Such children usually have noisy breathing, the mothers saying that it is the "noise of the phlegm." This is persisting, but the acute disturbances resembling asthma may alternate with skin manifestations. In one infant the eczema and the asthmatiform disturbances ebbed and waned alternately, unmodified by any measures but finally disappearing, the child as it approached the age of 5 being in apparently good health. In another infant, 4 months old, the enlarged thymus induced cyanosis and tendency to suffocation suggesting asthma. At first they occurred only when the child was crying, but later they became almost continuous. The parents would not consent to operative measures and the outcome is not known.

Actinomycosis of the Tonsil.—The usual measures applied to the acute tonsillitis in a young child failed to modify it and no benefit was derived even from gargling with glycerin containing 2 per cent. iodin and 8 per cent. potassium iodid. The absence of general symptoms and the refractory behavior suggested that the trouble was a mycosis, as there was a history of a stalk of grain being driven into this tonsil during a fall some time before. The tonsil was covered with nine white excrescences, and after failure of other measures, these excrescences were dug out, one by one, with prompt and complete return to normal.

Cronica Medico-Quirurgica, Havana

September, 1918, **44**, No. 9

American Medical Solidarity. Editorial.—p. 487.
*Importance of Treating Optic Neuritis Even of Long Standing. Juan Santos Fernandez.—p. 490.
*Ocular Tuberculosis. F. M. Fernandez.—p. 500.
Measles and Scarlet Fever Due to Alimentary Arsenic or Iodin Poisoning. V. de Castro.—p. 513.

Old Optic Neuritis.—Santos Fernandez insists that when blanching of the papilla is due to remote causes in brain or medulla or meninges, the optic neuritis might possibly have been arrested or cured if it had been systematically treated from the first or even at a later stage. The success we so often realize with specific treatment when syphilis is responsible for the blanching of the papilla should encourage heroic efforts in this line under other conditions. He reports five cases to sustain this view that possibly some of the nerve fibers might have escaped degeneration and might have been trained to recuperate their function. In these five cases the blanched papilla and the remnants of vision have not grown any worse during the long periods, up to forty-five years, during which the patients were under observation. In most of them the optic neuritis followed meningitis in early childhood, but the stationary character of the affection should have warned of the possibility of recuperation. The outcome cannot be deduced from the ophthalmoscope findings. The blanching of the papilla may last for weeks or years, and the vision may be impaired very little or be lost entirely. If the affection develops in the form of a central scotoma, the temporal sector of the papilla blanches first, and for a time may be the only sign of the degeneration. This occurs so often with alcohol intoxication that he called attention some years ago to this alcoholic amblyopia as a sign of alcohol poisoning. In conclusion he recalls the marvelous results now currently obtained in children completely blind from meningitis who recover vision under the influence of antimeningococcus serum.

Tuberculosis of the Eye.—Fernandez reviews the various forms in which tuberculosis can manifest itself in the eye, adding that on account of the insidious onset the tuberculous process is liable to escape recognition. The ocular process is generally secondary, but seldom secondary to pulmonary lesions. Any eye affection running a chronic course is suspicious of tuberculosis. Tuberculin treatment is the main reliance and has proved very successful in some cases, although it fails in others. It has given the best results in tuberculous iritis. Many have reported surprising cures under it, especially when associated with guaiacol applied locally in a 3 per cent. salve or 2 per cent. solution, or by subconjunctival injection. Darier has reported good results from subconjunctival injections of tuberculin in cases of tuberculous choroiditis; he explains this by the close communication between the subconjunctival space and the choroid. Others have reported good results combining this with subconjunctival injections of guaiacol.

Medicina Ibera, Madrid

Sept. 21, 1918, **4**, No. 46

*Morphin in Eclampsia. C. E. Roe.—p. 297.
Injection of Oxygen in Dyspnea. C. G. Zavaleta.—p. 304.

Sept. 28, 1918, **4**, No. 47

*Periscope for Radiography. L. Bois.—p. 325.
*The Ambard Constant. F. Zapata.—p. 326.

Oct. 5, 1918, **5**, No. 48

Treatment of Ulcer of Cornea. C. U. Alvarez-Reyero.—p. 2.
Iodin in Therapeutics. V. A. S. Alvarez.—p. 3.
Acute Dilatation of Aorta from Exertion. M. Utrera.—p. 7.

Oct. 12, 1918, **5**, No. 49

Diagnosis of Cerebral Uremia. J. M. Bausa.—p. 24.
Iodin in Therapeutics. VI. A. S. Alvarez.—p. 24.
*Prophylaxis of Valvular Lesions of the Heart. A. Simonena y Zabalegui.—p. 42. Conclusion.

Obstetric Eclampsia.—Roe relates that there were only two fatalities in the thirty-two cases of eclampsia in which he gave morphin by Rouvier's technic. The first dose is 0.02 gm., with half this dose again in half an hour and again in another half hour, continuing with 0.01 gm. at hour intervals

thereafter. The bowels are rinsed out with 6 or 8 liters of boiled water every eight hours. If the morphin could have been begun at the very first convulsions, he is confident that all the patients might have been saved. Thirteen cases are reported in detail.

Roentgen Periscope.—With Bois' periscope the roentgenologist can stand entirely outside of the field of the rays while inspecting the shadow on the screen, as he shows in an illustration. The periscope can be used in broad daylight.

Ambard's Ureosecretory Constant.—Zapata warns that the dread of having blood drawn or other cause for emotional stress may affect the diuresis to such an extent as to modify the Ambard coefficient when urine is obtained for the purpose. He makes a point of getting the urine for the test before drawing blood or other maneuver, and strives to keep the patient tranquil and placid with every biologic test.

Prophylaxis of Valvular Disease.—This long article, which has been continued serially during two months, reviews the present status of prophylaxis of disease of the heart orifices and valves. The main point is thorough treatment of acute rheumatism and syphilis until they are cured or become extinct. Next in importance is the early and active treatment of every infection, and, last but not least, moderation in eating and drinking. Also active muscular exercise during the years when life is taken more easily and one is inclined to lapse into settled sedentary habits in the thirties. Modern life strains the mental faculties but lets muscles rust from disuse, and this tendency favors heart disease.

Revista Ibero-Americana de Ciencias Medicas, Madrid

October, 1918, **40**, No. 170

*Fibrous Transformation of Adipose Tissue in Knee. A. M. Angel.—p. 241.
Dislocations and Fractures of Elbow. S. G. Hurtado.—p. 261. Cont'n. Present Status of Chronic Myocarditis. A. Mut.—p. 265.

Chronic Inflammation in the Knee.—Angel has not been able to find any record of the affection in question. Without any new cause there seems to be an attack of mild inflammation in one or both knees; there is an effusion of synovial fluid but not much pain and no fever. The bones are shown by radioscopy to be entirely normal, and these patients seldom have any history suggesting gonorrhea, gout, tuberculosis or rheumatism. The trouble is a chronic inflammation of the adipose ligament with occasional transient involvement of the serosa of the knee joint. The cells of the adipose tissue have become transformed into fibrous tissue under the influence of some repeated slight trauma, such as the rubbing of the knee against the bedstead in doing massage, or a sudden wrench as in playing football. When the fibrous transformation is once realized, nothing but removal of the adipose ligament will cure the condition. He describes briefly the technic with which he has removed the adipose ligament without opening up the joint or injuring the serous membrane.

Revista de Medicina y Cirugia, Havana

Dec. 10, 1918, **23**, No. 23

*Antisepsis for Surgery of the Eyes. R. Guiral.—p. 645.
Inaugural Address of Physiology Course. R. P. Vento.—p. 649.

Modern Antisepsis in Surgery of the Eye.—Guiral had to abandon tincture of iodin in surgery of the eye as the iodin toughened the conjunctiva until it was like parchment, too hard to cut readily. Otherwise the iodin was extremely satisfactory. He is now using a mixture of 0.5 gm. each of crystal violet and verde violet in 50 gm. each of distilled water and 80 degrees alcohol. This is applied freely to the eye after the cocain; in a few minutes he rinses out any excess of the stain. If the eyeball is very intensely stained, he anoints it a little, and the operation can proceed with all confidence that the tissues are perfectly sterilized. His success in a series of 100 cataract operations amply proves this.

Revista Medica Cubana, Havana

August, 1918, **29**, No. 8

Glaucoma and Dacryocystitis; Iridectomy. J. Santos Fernandez.—p. 407.

October, 1918, **29**, No. 10

Cysts in the Neck. J. E. Ferrán.—p. 518.
*Paralysis of the Third Pair. J. Santos Fernandez.—p. 524.

Syphilitic Paralysis of the Third Pair.—Santos Fernandez relates that the paralysis had been ascribed to a fall, the girl of 8 having struck the vertex of her head in falling, but the failure of all other measures and the prompt subsidence of the symptoms under a course of mercurial treatment differentiated the affection as a manifestation of inherited syphilis.

Revista Medica del Uruguay, Montevideo

October, 1918, **21**, No. 10

*Transfusion of Citrated Blood. L. Agote.—p. 595.
*Congenital Missing Half of One Vertebra, with Rudimentary Twelfth Rib. C. Butler.—p. 606.
*Technic for Splenectomy. L. Mérola.—p. 615.
*Nephropexy by Transperitoneal Route. L. Mérola.—p. 622.
*Ophthalmoplegia of Malarial Origin. J. C. M. Fournier.—p. 626.

Transfusion of Citrated Blood.—Agote describes his first application of the citrated method for blood transfusion, Nov. 9, 1914, and the history of the general adoption of the method since.

Aplasia of Spine and Ribs.—Butler gives roentgenograms of a young man apparently healthy until an attack of kidney colic. The roentgen rays then disclosed that half of the third lumbar vertebra was missing and also nearly all of the left lower rib. Both deformities can be explained by assuming an intra-uterine lateral inflexion of the spine.

Splenectomy.—Mérola advises utilizing, more than has hitherto been the case, the natural planes of cleavage in the abdomen in surgery of the stomach, etc. He describes the inframesocolic and the supramesocolic planes of cleavage. For resection of a segment of the stomach, its cleavage connection with the spleen and pancreas has to be broken up as otherwise they are pulled unnecessarily out of place when the stomach is lifted up. On the other hand, this cleavage facilitates removal of these organs together, as he shows in reporting a case of a large tumor in the spleen requiring resection of the tail of the pancreas. The whole mass of the spleen, etc., was removed in one block after ligation of the splenic artery, which before separating the ligaments had been inaccessibly buried. In a second case the spleen, a large segment of the stomach, and the tail of the pancreas were removed together as one mass, thanks to the retrogastric-pancreatic plane of cleavage. The operation was complicated, however, by resection of the left angle of the colon, the necessity for which had not been anticipated, and the patient succumbed two days later. His incision for these operations is on the median line. If conditions are found which justify the extirpation, he continues the incision upward and to the left, and resects 2 cm. of the bony end of the seventh rib. If the pleura is opened, he sutures it at each of the lips of the incision to isolate its cavity. This gives ample access to the region and opportunity for taking advantage of the retrogastric-pancreatic plane of cleavage, "one of the wonderful cleavages which make such operations in the upper abdomen possible."

Nephropexy Through the Peritoneum.—Mérola has noticed that when there is a floating kidney, the right angle of the colon is generally sagging also. When there is congenital displacement of the kidney, the cecum and the colonic angle are often abnormally low. In one case of movable kidney the colonic angle had sagged into the iliac fossa. In operating for appendicitis in this case, after removing the appendix he incised the peritoneum, thus reaching the movable kidney. He fastened it to the anterior aponeurosis of the transverse muscle and to the peritoneum. Then the peritoneum was sutured and the colonic angle was lifted up with a few supporting stitches, thus bringing it up until it concealed the suture in the peritoneum. The nephropexy was thus done without a special incision for it, utilizing the appendicectomy incision. The same might be done, he adds, at a gallstone operation. He does not approve of fastening the kidney to a rib. Still another method of nephropexy consists in suturing the peritoneum to the wall below the kidney so that the latter cannot slip down, once replaced in its position. Two U stitches with silk hold the peritoneum against the

muscular wall. The ends can be tied just below the skin, through a small incision at the back. The suture threads thus hold the peritoneum against the wall and hold back the kidney in its place.

Total Ophthalmoplegia of Malarial Origin.—Fournier reports a case of this kind and states that he can find no duplicate of total malarial bilateral ophthalmoplegia in medical literature. The ophthalmoplegia was purely motor and yielded promptly to quinin treatment. The onset was sudden, accompanied by severe headache and chill. The man was an Italian sailor of 29. The ophthalmoplegia was total in both eyes and left facial paralysis had developed with it and subsided at the same time. In a recent compilation of twenty-five cases of malarial polyneuritis, in only two were cranial nerves involved, and these were the seventh pair.

Revista Sud-Americana de Endocrinologia, etc., Buenos Aires

October, 1918, **1**, No. 10

Liver Organotherapy. S. F. Oyarbide.—p. 285.
*Sugar Injections in Whooping Cough. A. J. Armando and L. V. Berisso.—p. 287. Concluded in No. 11, p. 325.

Sugar Treatment of Whooping Cough.—Armando and Berisso report treatment by intramuscular injections of 5 or 10 c.c. of a 100 per cent. solution of saccharose in twenty cases of whooping cough. The first effect noted was that the nights passed without paroxysms; the number during the day increased at first, but then grew progressively milder and shorter and in ten or fifteen days the cough had disappeared. There was no expectoration after the eighth or tenth day. There were no complications or by-effects. No other medicine was given. The disease was of from ten to twenty days' duration in the twenty cases; the details of all are given in full.

Semana Medica, Buenos Aires

Oct. 24, 1918, **25**, No. 43

Solid Tumors in Broad Ligaments. M. Serfaty.—p. 491.
*Cultivation of Medicinal Plants. J. A. Dominguez.—p. 500.
Diagnosis of Syphilis. P. V. Cernadas.—p. 502.
*Tuberculosis and the Cinemas. P. Ivanissevich.—p. 509.
Prophylaxis of Tuberculosis in the Schools. E. R. Coni.—p. 510.

Cultivation of Medicinal Plants in Argentina.—Dominguez is director of the Institute of Botany and Pharmacology of the University of Buenos Aires, and he here replies to an inquiry from the government in regard to the feasibility of cultivating the cinchona in Argentina. He specifies certain regions where conditions would be favorable, and advises starting with the *C. succirubra* as the hardiest species. If this succeeds, then others could be tried. Near the equator a high altitude is desirable. In Java the official plantations are at 1,230 to 2,350 meters but some private plantations are as low as 550 meters. All known plantations are above this altitude except in Australia where, although at an altitude of only 33 meters, the bark has yielded 6.50 per cent. of alkaloids. The *C. calisaya* seems to do best at an altitude of 2,000 meters. With higher altitudes the levorotatory alkaloids seem to increase while the proportion of dextrorotatory decreases. The cinchona plants can bear a temperature of 2 C. but at freezing point or below they are seriously injured, as also with very high temperatures. The admissible range is from 4 to 33 C. that is, a minimal average of 15 and a maximal average of 27 C. The rainfall has to be at least 1,200 mm.; in the Java plantations the annual precipitation is 2,300 to 4,500 mm. with a maximal humidity of 96 per cent. There is no yield the first four years.

Tuberculosis and Moving Picture Shows.—Ivanissevich remarks that the moving picture shows "with which the entire republic is plagued," are in halls which are kept closed against the sun and air and are never disinfected. They are actual hotbeds for germs of all kinds, and cannot fail to be a potent means for transmission of tuberculosis. Five guinea-pigs were smuggled clandestinely on three occasions into a moving picture hall for a few hours and two of them died of tuberculosis the thirtieth and fiftieth days. Further experiments were not allowed. He pleads that the halls should be opened to the sun and air for at least six hours every day, and exhaust ventilation be provided at all times. The laughter at the comic shows helps to scatter germs. A hall holding 300 shelters 9,000 in a month and 54,000 in six months. As 4 per cent. of the populace are estimated to be tuberculous, this would average 2,160 tuberculous visitors to the hall during the six months, and the bacilli expelled in coughing and speaking find unparalleled conditions for proliferation in these dark and unventilated halls.

Vida Nueva, Havana

October, 1918, **10**, No. 10

Surgery for Contracted Pelvis. E. Hernandez.—p. 269.
Status of Treatment of Diabetes. A. G. Del Valle.—p. 281.

Gann, Tokyo

December, 1918, **12**, No. 4

*Artificial Production of Sarcoma in Rats. N. Umehara.—p. 43. Conc'n.
Curative Action of Radium on Hen Sarcoma. H. Ogata.—p. 49.
Leukocyte Count in Sarcoma Rats. T. Maeda.—p. 50.

Sarcoma Produced from Transplanted Adenofibroma in Rats.—The first part of Umehara's article was reviewed in these columns, Jan. 25, 1919, as he told of transplanting a spontaneous benign tumor found on a white rat through numerous generations of rats. He finally succeeded in modifying the tumor grafts by injecting sudan III in olive oil directly into the tumor, as it developed from transplantation in the eleventh generation. No other substances tested induced malignant transformation, and this occurred only in two of the three rats thus treated. The sudan oil was injected, a drop at a time, at five or six day intervals, repeated seventeen times in two rats, which then died, the forty-second day and the fifty-seventh day. A third rat died after the eighth injection, without the tumor showing any modification. The inoculation tumor at the time the injections were commenced was about the size of the head of the thumb. It grew to be as large as a goose egg, and the microscope revealed that part of it was a sarcoma, of a polymorphous type, which seemed to have developed in consequence of the chemical irritation from the sudan oil. Transplantation further of the sarcomatous portion of the tumor elicited sarcomatous growths in other rats, while transplantation of the nonsarcomatous portion of the tumor caused the production only of fibromatous tumors of the same benign type as at the beginning of the series. The malignant inoculation tumors were macroscopically soft and of a very rapid growth, with early necrosis and softening and numerous metastases in lymph glands, etc., so that the animals succumbed to cachexia. Both spindle cells and round cells were evident. The transplantability of the original tumor had begun to wane by the later generations but, after this malignant transformation, it revived again so that he was able to transplant this artificial sarcoma through fourteen generations, with from 45 to 90 per cent. positive results, a total of positive results in 291 of the 445 rats used in the experiments. The microscopic and biologic findings were very much like those observed in the human. The phenomena reported confirm Virchow's irritation theory of the origin of cancer, and also Yamagiwa's dictum that the influence of the medium is what forms the cancer cell. The sarcomatous tumors finally displayed a tendency to return to a fibromatous type of tumor. There is no doubt in Umehara's mind that this artificial rat sarcoma developed from the connective tissue elements of the adenofibroma. The article is illustrated, with a full summary in German and considerable bibliography.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Nov. 23, 1918, **2**, No. 21

*Reform in Medical Education. G. Van Rijnberk.—p. 1655.
*Thoracoplastics for Pulmonary Tuberculosis. L. S. Hannema.—p. 1661.
Should Pharmacognosy Be Dropped from Medical Examination? E. C. van Leersum.—p. 1671.
Reform in Social Medicine. J. L. C. Wortman.—p. 1675.
Comparison of Recent Epidemics of Influenza. A. Giltay.—p. 1678.
The Point of Lessened Resistance. A. Welcker.—p. 1679.

Reform in Medical Education.—Van Rijnberk quotes R. M. Pearce's three articles in "Medical Research and Education," published in 1913, and comments on the similarity between his ideas and those of Schwalbe (mentioned recently, page 317). Pearce's motto is also "Do it yourself," and he advocates that the hours devoted to lectures and laboratory work

should be in the proportion of one to six or eight. At Amsterdam, Rijnberk adds, the proportion is about one to one. He cites further that "science lives in the laboratories and clinics. When it is dead, it is buried in a book." In conclusion Rijnberk remarks that many of his readers will regard Pearce's ideas as "all too American." Especially his denunciation of too much oral teaching. But in the Netherlands the tendency is too much in the other direction. In Germany, the methods of examining for a degree have not been changed at all for seventeen years, and in the Netherlands not for half a century.

Operative Treatment of Chronic Pulmonary Tuberculosis.—Hannema reports in detail the case of a married woman of 32 who had presented symptoms of pulmonary tuberculosis for about eight years. The right lung seemed to be entirely involved, while the left lung seemed to be clinically sound. The heart shadow was lost in the shadow cast by the right lung, and there was daily considerable blood in the profuse expectoration while the woman was growing weaker, although there was not much fever. A large cavity was evident and the conditions precluded artificial pneumothorax. A thoracoplastic operation, according to Wilms' technic, was done as the lung displayed a tendency to shrivel, and all that kept it from collapsing was the skeleton. From 4.5 to 6.5 cm. were resected from each of the nine ribs, beginning at the lowest. The pleural cavity was not opened but the right side of the chest sank in at once. Healing was delayed by the cough and expectoration, and the pulse was weak and fast, but the appetite was good. Twenty-three days later the ribs were resected from the rear, the cartilage and a small part of the second to the sixth ribs, inclusive, under local anesthesia. The muscles were sutured with catgut, the skin with pure silk. The blood disappeared from the sputum after the first operation, and the general condition rapidly improved. The intervention unmistakably saved the woman's life. She now, fifteen months later, feels well but takes care of herself and there is still a little sputum. After repeated examinations, a few tubercle bacilli were found, showing that the woman has not been completely cured, but everything seems to promise this in the end, as the patient is cooperating with zeal and intelligence. In a recent compilation of 41 similar operative cases, 8 were cured, 7 much improved and 13 improved; in 3 the condition has remained stationary; in 4 it has become aggravated, and 6 have died. Hannema gives the minute details of his case, with the roentgen findings, and classes it in the group of the much improved.

Ugeskrift for Læger, Copenhagen

Nov. 21, 1918, **80**, No. 47

*Phototherapy of Surgical Tuberculosis. E. Collin.—p. 1841.
*Technic for Lumbar Puncture. B. Pontoppidan.—p. 1855.
*Wassermann Reaction. H. I. Schou.—p. 1858.

Light in Treatment of Tuberculosis of Bones and Joints.—Collin declares that rational phototherapy is still in its infancy, notwithstanding the great advances made in recent years under the leadership of Finsen, Rollier and Reyn and Ernst. The two latter in the last five years have demonstrated that the light treatment alone, without the cooperation of climatic influences, cured as effectually at the Finsen Institute at Copenhagen as Rollier's mountain climate sunbaths. They proved that artificial light can take the place of sunlight from the therapeutic standpoint. The arc light rays seem to be more potent than any other source of radiant energy, although some prefer the quartz mercury vapor light. As the latter is less expensive to install, the two seashore sanatoriums for tuberculous children in Denmark are equipped with this, and Collin here reviews the experiences with 138 tuberculous children given this treatment after they had failed to show improvement under the general measures alone. They were thus the severer cases; in 102, general light baths were given, in 52 merely local, and in 34 regional baths, in some associated. The average length of the course of light treatment was five months; the range was from six weeks to ten months. All this material is described in detail, with the technic shown in illustrations and the outcome.

Recent reexamination shows that there has been recurrence in 13 of the 138 cases; in 11 of these 13 cases the course of phototherapy had been less than two months. Evidently the treatment was arrested before it had answered its complete purpose. In the remaining 2 cases, the children had other tuberculous lesions besides those that had been treated. The results in the total 138 cases must be regarded as extremely favorable. The seashore environment may have contributed, but as this alone had shown no benefit beforehand, it need not be taken much into account in estimating the outcome. The relatively rapid cure, the absence of disfigurement and the good functioning of the limbs are special advantages of this phototherapy. The experiences related impress the wisdom of sending children with tuberculous processes in glands, bones or joints to a seashore sanatorium and supplementing the ordinary measures with courses of light treatment, sunlight, arc light or quartz lamp.

In 108 cases the tuberculous lesions seem to be cured; in 20 there was great improvement, and in 12 others some improvement. No benefit was observed in 16 cases and the lesion progressed in 4; these were cases of spondylitis or white swelling of the knee. All of the gland cases and tendon sheath cases and cold abscesses were improved or cured. The children were between 4 and 15. In one case ichthyosis subsided under the light treatment applied for a tuberculous process. The children sometimes developed fever under the exposures, and recurring febrile bronchitis was not infrequent. The latter may have been the result of chilling during the exposures—the quartz lamp does not generate much heat—or it may have been from activation of latent tuberculous peribronchitis. There was complicating pulmonary tuberculosis in 6 cases, and in 4 the exposures had to be suspended as the condition was aggravated by them. This group includes the two spondylitis cases. Keratoconjunctivitis developed in 12 cases, and he queries whether this was due to injury of the eyes from the light, or activation of a latent process, or the result of the universal reaction to the toxins. The latter seems to him the most plausible explanation. An epidemic of varicella in the sanatorium did not spare the exposed children, and the pustules seemed to be extra large in them, resembling actual variola. Erysipelas developed in 5 cases, apparently uninfluenced by the phototherapy.

Technic for Lumbar Puncture.—Pontoppidan reports that lumbar puncture in a recent series of 100 cases was done alternately with the patient seated and reclining. Only 2.5 c.c fluid were withdrawn, and none of the patients had any serious disturbances afterward. In 58 per cent. there was not a trace of headache or pain in the spine or other by-effects. This group included 35 seated and 23 reclining patients. In the others, presenting some by-effects, for from one to five days, the proportions between the seated and the reclining were about equal. In 6 cases the by-effects were perceptible for from six to ten days in seated patients, and from six to eighteen days in 4 given the lumbar puncture when reclining. These experiences show that the reclining posture has no advantage over the seated. They demonstrate further that it is not necessary to have the subject go to bed afterward. This was always advised, but the advice was seldom followed by out-patients. In short, Pontoppidan advocates doing lumbar puncture even in the office or dispensary when it is not convenient for the patient to enter the hospital.

Serodiagnosis of Syphilis.—Schou says that no Wassermann reaction was obtained in 1,457 of 1,654 persons tested, but it was positive in 136 who had other signs of syphilis; also in 33 (2.2 per cent.) who had no other manifestations of the disease. In 28 cases with other signs of syphilis the reaction was negative, but 19 of these had been taking treatment. In the other 9 no treatment had been given, and they presented unmistakable symptoms of syphilis, either dementia paralytica, tabes, or a syphilitic brain or muscle disease. In some of these cases the spinal fluid was highly pathologic—in some cases giving a positive Wassermann, but there was no seroreaction to be elicited in the blood.